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THE ETIOLOGY AND TREATMENT OF RAT-BITE FEVER

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Rat-bite fever is an infectious disease following the bite of a rat, or much more rarely, the bite of some animal having contact with rats (weasel, ferret, cat). There is an incubation period of from one to sixty days, averaging about two weeks. This is followed by one or more febrile attacks, accompanied by a characteristic rash. As a rule there are many of these paroxysms, which tend to recur with remarkable regularity, at intervals of from five to ten days. The duration of the individual attack averages from two to three days. The temperature rises gradually, to attain the maximum on the second day, and falls by crisis, with profuse sweating. Severe muscular pains and dysphagia are often prominent symptoms. In the interval between attacks the patient feels almost well.

This is the usual form of the disease. In cases, however, in which there is only one attack, the fever may last for several weeks, and be of the remittent or intermittent type. Abortive forms occur, in which the fever is not high and the local symptoms dominate the picture. An afebrile form has been described, with symptoms on the part of the nervous system in the foreground.

The mortality of the reported cases, of which there are about eighty, is 10 per cent. For a full description of the disease, with a review of the literature, the reader is referred to Crohn's[1] recent article.

ETIOLOGY

Up till 1914 the causative agent had not been discovered. In that year Schottmüller[2] described a streptothrix, the *Streptothrix muris ratti*, found by him in eight successive blood cultures in a case of rat-bite fever. A closely allied organism was isolated by him in pure culture in a case of septicopyemia with a peculiar hemorrhagic and pustular rash, following the bite of a South African squirrel. Recently Blake[3] has isolated in a fatal case of rat-bite fever an organism practically identical with that of Schottmüller, obtaining it in pure culture from the blood during life, from the heart's blood postmortem, and from a diseased mitral valve. Its characteristics are briefly as follows: It is a branching filamentous organism, varying greatly in length, and showing a strong tendency to fragment into bacilluslike and coccuslike forms. The filaments may be either straight or greatly curved. They stain readily with the usual bacterial stains, and are negative or faintly positive to Gram's stain.

The occurrence of a typical case of rat-bite fever at the New Haven Hospital led me to search for the cause of the disease. At that time I was not aware of Schottmüller's work, and Blake's article had not yet appeared. On account of the resemblance of the disease to relapsing fever, its apparent curability by salvarsan, as shown by Hata,[4] and the failure of previous investigators to obtain positive results from blood cultures, it was thought that the organism might be a spirochete. For this reason fresh smears, taken at the height of the fever, were examined with dark-field illumination. With this method, threadlike organisms were discovered in the blood with little difficulty, Oct. 5, 1915, and in each succeeding paroxysm until the fever ceased. They were numerous in the following paroxysm, October 10, and rather scanty in the last two attacks. They were filamentous, varying in length from 9 to 20 microns, nonmotile, some straight, others curved or doubly curved.

Some resembled a chain of two or three bacilli, others a chain of cocci of various sizes (Fig. 1). Between the paroxysms no organisms could be found. Smears dried and stained with gentian violet, borax methylene blue and Leishman's stain gave unsatisfactory results; only short bacilluslike forms could be found. With iron hematoxylin, however, several long filaments could be demonstrated (Figs. 2 and 3). There were also rather numerous bacilluslike and coccuslike forms occurring in small heaps. Dr. Blake kindly sent stained smears from the cultures in his case for comparison. The resemblance in the morphology was striking. Unfortunately all attempts to grow the organism from the blood were failures, although the mediums which Blake found most favorable (ascitic bouillon and Loeffler's blood serum) were used. Animals (brown rats, rabbits and guinea-pigs) were inoculated with the patient's blood by Prof. C. J. Bartlett, also with negative results. It should be stated, however, that no cultures or inoculations were made at the time when the organisms were most plentiful in the blood.

Control examinations of blood smears from other diseases and from healthy persons, both with dark-field illumination and stained with iron hematoxylin, failed to show any similar bacteria.

The constant presence of the organism in the paroxysms, and its absence during afebrile periods, lead me to believe that it is the cause of the disease. Further evidence of its etiologic significance is fur-

1. Crohn, B. B.: Rat-Bite Fever, Arch. Int. Med., June, 1915, p. 1014.
2. Schottmüller, H.: Dermat. Wchnschr., 1914, lviii, Ergänzungsheft, p. 77.
3. Blake, F. G.: Jour. Exper. Med., 1916, xxiii, 39.
4. Hata, S.: München. med. Wchnschr., 1912, lix, 854.

nished by its close resemblance morphologically to the *Streptothrix muris ratti* of Schottmüller and Blake.

Recently Futaki[5] and others reported the finding of spirochetes in the skin and lymph nodes in two cases of rat-bite fever. Animal inoculations were successful, and these authors believe that they have found the cause of the disease. It is difficult to reconcile this statement with the work of Schottmüller, Blake and myself.

CASE REPORTS

CASE 1.—*History.*—Mrs. A. D., a widow, aged 46, entered the New Haven Hospital (hospital number 54,919) Sept. 18, 1915, on the surgical service of Dr. J. W. Churchman. Her past history contained nothing of importance. On the night of August 22, while asleep, she was bitten on the second toe of the left foot by a rat. She woke up and heard the animal jump to the floor; earlier in the day she had seen a rat in her room. After an incubation period of from five to eight days, the patient's memory on this point being far from exact, she was taken with marked dysphagia, fever, vomiting and headache. For four days she could swallow nothing but liquids. There was also marked frequency of micturition. The character of the fever in the first attack could not be ascertained. September 14, twenty-three days after the injury, she began to have pain and swelling in the bitten foot, and soreness in the groin on the same side.

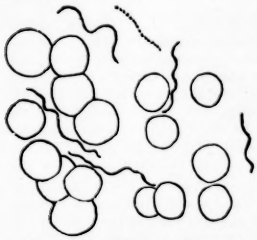

Fig. 1.—Composite sketch of several fields to show organisms as they appear with dark-field illumination.

Physical Examination (Sept. 18, 1915).—The patient was rather obese, and looked older than her age. The visceral examination was negative. On the second toe of the left foot there were two small marks like tooth marks. About the first and second toes there was a circumscribed area of erythema, about 6 cm. in diameter, edematous and very tender. In the popliteal space was another area of erythema, about 3 cm. in diameter, neither tender nor edematous. There was a slight enlargement of the glands in the groin.

Course.—The patient entered the hospital in the midst of a febrile attack, the temperature falling the next morning by crisis. After this she had six paroxysms, coming on with remarkable regularity once every six days. So exact was the periodicity that the onset of an attack could be foretold almost to the hour. The duration of the fever varied from forty-four to sixty-eight hours, that of the afebrile period from seventy-two to ninety-six hours (Fig. 4). The temperature rose gradualy at the onset, and fell by crisis in the first four paroxysms, by lysis in the last two. The symptoms consisted of fever, thirst, nausea and vomiting, headache, pains in the muscles of the neck, and in some attacks dysphagia. Toward the crisis there was profuse sweating.

Between the attacks the patient felt comfortable. The heart remained normal until convalescence, when a slight mitral murmur was discovered, possibly the result of the anemia. The spleen was palpable at only one examination, October 5; at other times it was not enlarged. There was a well marked polynuclear leukocytosis with each paroxysm, with a maximum count of 24,000 cells. Between the attacks the count was normal. The course of the leukocyte curve paralleled very closely that of the temperature, as is apparent on the chart. The eosinophils were decreased during the fever, and rose to the upper limits of normal in the period of apyrexia. The highest eosinophil count was 4 per cent., or 280 in the cubic millimeter. A single count of the red cells, October 11, showed 3,500,000, with 58 per cent. hemoglobin. In smears the red cells appeared normal, and no blasts were seen. The urine, September 20 and 30, was negative; October 11, however, a single specimen showed a heavy trace of albumin. No casts were seen, but as the urine is recorded as alkaline and cloudy, it is fair to assume that it was decomposed, and casts therefore might have been obscured or digested.

Eruption.—October 5, a copious rash was observed, which certainly was not present at entrance, but might have been overlooked at the two previous paroxysms. It consisted of about 20 bluish-red circular spots, from 1 to 3 cm. in diameter, sharply outlined, very slightly raised, situated on the cheeks, forehead, neck, back, front of chest, abdomen, arms and thighs; there were none on the lower legs and feet. Some of the spots showed an elevated area in the center, about 5 mm. in diameter, of a deeper red. The bitten toe was pale pink and somewhat swollen. The bite had healed, leaving a visible scar. The lymph nodes in the left groin were considerably enlarged, ranging in size from pea to bean; elsewhere they were normal. The later course of the eruption was curious; the spots faded in the afebrile interval, but never completely disappeared; with each paroxysm they became bright again. From time to time fresh spots appeared. The individual lesion started as a circular uniformly reddened area, which later became ring-shaped, owing to fading at the center. Those spots which had a darker center showed on fading a circular red spot in the center of a reddish ring, like the bull's-eye of a target.

Treatment.—Solution of potassium arsenite (Fowler's solution) was given without any apparent effect. October 26, at the close of the sixth paroxysm, salvarsan in the dose of 0.3 gm. was administered intravenously. The effect was striking; the attacks ceased, never to recur, and convalescence promptly set in. When last seen, Dec. 31, 1915, the patient was well.

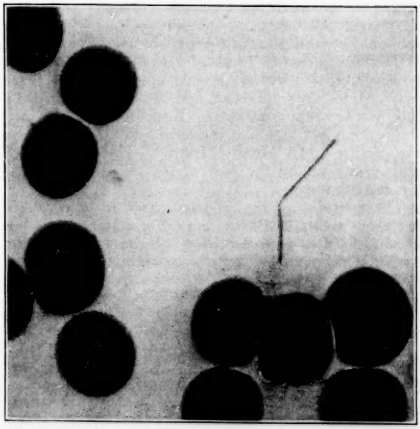

Fig. 2.—Photomicrograph of organism in blood smear, stained with iron hematoxylin. Magnification, 2,000 diameters.

Researches on the Blood.—The organisms described above were found in small numbers, October 5, on the second day of an attack. In the next paroxysm, on the first day of fever, they were abundant, often several in one field, but on the following day, though the fever was somewhat higher, no organisms were discoverable; this is like what occurs in relapsing fever, in which the spirochetes vanish from the blood shortly before the crisis. In the next attack the bacteria were very scanty, one filament being found on the

5. Futaki, Takaki, Taniguchi and Osumi: Jour. Exper. Med., 1916, xxiii, 249.

second and several on the third day. In the next and last paroxysm about six organisms were found on the second and a very few on the third day.

Cultures from the blood were made, October 5 and 17, with negative results. Plain agar, Loeffler's blood serum and ascitic bouillon were used. On the 17th, Prof. C. J. Bartlett inoculated brown rats, rabbits and guinea-pigs with the patient's blood, but without effect.

The foregoing case is the third on record in which organisms, presumably streptothrices, have been found in the blood, and the first in which they have been demonstrated in fresh smears with dark-field illumination, and in stained smears; the other two cases are those of Schottmüller and Blake.

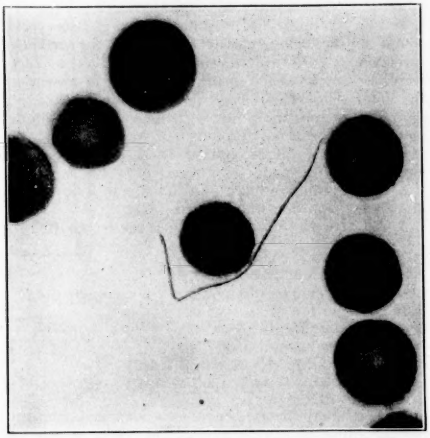

Fig. 3.—Photomicrograph of organism in blood smear, stained with iron hematoxylin. Magnification, 2,000 diameters.

While this woman was still under observation, a second patient with rat-bite fever entered the hospital.

CASE 2.—*History.*—H. A., a farmer, aged 32, entered the New Haven Hospital, Nov. 2, 1915 (hospital number 55,431), complaining of a sore arm. October 3 he was bitten by a rat on the middle finger of the right hand. The wound healed in about a week, though the finger remained somewhat swollen. October 25, after an incubation period of twenty-two days, he noticed a dull pain in the right axilla, which has persisted ever since. Two days later he felt a similar pain in the bend of the right elbow, and noticed a red streak there. October 31, the right side of the neck became very stiff and remained so for twenty-four hours. There were chilliness, headache and malaise. The patient kept at work until the day before admission to the hospital. October 30, he consulted Dr. N. A. Ludington, who found a temperature of 100 F. and very kindly referred him to me for further study.

Physical Examination.—November 2, this revealed a well developed and well nourished man, with moderate prostration. The color was good and the visceral examination negative. At the seat of the bite on the dorsum of the right middle finger there was a short linear scar, surrounded by an infiltrated, reddened and swollen area, tender on palpation, and 1 cm. in diameter. In the fold of the right elbow there was an area of erythema the size of the palm of the hand, part of which had been treated with iodin. Above the portion so treated there was an area of erythema about 5 by 7 cm. with roughly crescentic, sharply marked outlines. The lower part of the right axilla was occupied by an erythmatous area, dull pink, roughly circular, and about 8 cm. in diameter. No application of iodin had been made here. A thickened lymphatic vessel could be plainly felt just beneath the skin on the inner aspect of the upper arm. There was no general eruption. In the right axilla there was a packet of several enlarged tender lymph nodes, the whole 2 cm. in diameter. The epitrochlear node was enlarged on the right. Elsewhere the lymph nodes were normal. The temperature at entrance was 99, the leukocyte count was normal (6,300, November 2; 8,800, November 6). The differential count was also normal. Repeated examinations of blood smears with dark-field illumination failed to reveal any organisms. The urine was negative.

Subsequent Course.—November 4, the infiltration about the bite was decidedly less, the erythema at the elbow and the axilla had nearly disappeared, and the lymph nodes in the axilla were smaller. The following day he complained of some pain in the axilla and headache, and the temperature rose to 99.2. November 8, the seat of the bite was incised and curetted, and cultures made on Loeffler's serum from the blood and tissue, but with negative results. He was then given 0.3 gm. of salvarsan intravenously. A few hours later he had a chill with rise of temperature to 103, which was attributed to the injection. With this exception the temperature never rose above 99.2 while he was in the hospital. The next day he felt well and went home. He was seen by Dr. Ludington in January, 1916, and reported that he had remained well since leaving the hospital.

Case 2 illustrates the abortive type of rat-bite fever. The diagnosis rests on the history of a rat-bite, the long incubation period, the inflammation about the seat of the bite, with lymphangitis and lymphadenitis, and the characteristic areas of erythema at the elbow and axilla. There were no paroxysms, and the blood smears were negative, probably because the stage of invasion of the blood stream was never reached. The administration of salvarsan was followed by prompt recovery. It is probable, of course, that he would have recovered without it, but not so quickly.

DIAGNOSIS

Sepsis is common after the bite of any animal, or of man, owing to the almost necessary infection of the wound with bacteria from the mouth. The symptoms of rat-bite fever, however, have occurred only after the bite of the rat, or of an animal coming into close association with rats (ferrets, weasels, cats). The disease described by Schottmüller after the bite of a South African squirrel is clearly distinct from rat-bite fever, both in its clinical and its bacteriologic features. Rat-bite fever is distinguished from ordinary wound infection by the length of the incubation period, which is usually about two weeks in the former, and only a

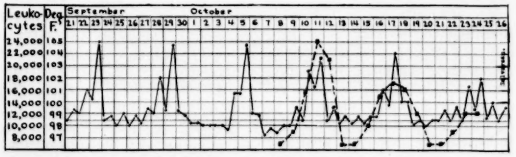

Fig. 4.—Temperature and leukocyte chart: solid line, temperature; broken line, leukocytes.

few hours in the latter. The local appearances in the two conditions may be similar; abscess formation, however, has not been observed in rat-bite fever, though occasionally there is necrosis and gangrene at the seat of the bite. An important distinguishing feature is the localized erythema about the joint proximal to the wound in rat-bite fever, which is not encountered in sepsis.

Rat-bite fever is distinguished from other infectious diseases by the history of a rat-bite, the form of the temperature curve, and the presence of a characteristic eruption. The temperature may be only slightly elevated in abortive cases, or there may be only a single attack of remittent or intermittent fever of a few weeks' duration, as in Schottmüller's case. Usually, however, there are attacks of fever of a few days' duration, ending by crisis and recurring with remarkable periodicity about once a week, the whole constituting a picture met in no other disease, with the exception of relapsing fever. In the latter, however, there are rarely more than three attacks, while in rat-bite fever the number of paroxysms is much greater, as many as twenty-six having been recorded. In relapsing fever the spirochete of Obermeyer is easily demonstrated in the blood in the early days of the attack, especially if dark-field illumination is used.

The eruption is of great diagnostic importance. It may be either local or general. In the former case it occurs as a diffuse bluish-red erythema, usually with sharply marked outlines, and of considerable extent, up to the size of the palm or even larger. It is situated at the seat of the bite, and also in the skin overlying the lymph nodes which drain the wound. Thus a bite on the face may be followed by extensive erythema in the neck, or one on the finger by a rash at the elbow and axilla, as in Case 2.

The generalized form of the eruption is striking, and when typical is almost pathognomonic. It consists of fairly numerous, large bluish-red spots, which are perfectly circular in shape, slightly raised, with sharply defined margins. The size of the spots varies from that of a pea to a silver dollar (from 0.5 to 3 cm.). In the course of a few days they frequently become ring-shaped, resembling the lesions of erythema multiforme, but differing from that disease in that they show no predilection for the extensor surfaces. They disappear on pressure, they do not itch and they do not desquamate.

Should my finding of organisms with the dark-field illumination be confirmed in subsequent cases, this method should furnish a quick and ready means of recognizing the disease. Blood cultures with the present methods would seem to be less reliable from the diagnostic point of view, on account of the difficulty in growing the organism. They remain, of course, indispensable for the scientific investigation of the disease.

TREATMENT

The prophylaxis is simple. Immediate cauterization of the wound, either by strong phenol (carbolic acid) or the actual cautery, has proved, in the extensive experience of Miyake,[6] a sure preventive. The disease, once established, has not yielded to any form of treatment until recently, when Hata[4] (in 1912) reported eight Japanese cases treated with salvarsan. The results were striking, five out of the eight patients being cured by a single injection. Of the remaining three, one had a single relapse, which subsided spontaneously; a second relapsed and was not followed further; the third, a child aged 2½ years, was greatly improved but not cured by three injections. The effect was the same whether the drug was administered at the height of the fever or during the stage of apyrexia. Since then two cases have been reported from Bombay, by Surveyor[7] and by Dalal,[8] both with cure. My cases bring the total of those treated up to twelve, with cure in ten, or 83 per cent. The dosage is the same as for syphilis.

6. Miyake: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1900, v, 231.

SUMMARY AND CONCLUSIONS

1. In a typical case of rat-bite fever, organisms were found in the blood, closely resembling the *Streptothrix muris ratti* of Schotmüller and Blake. They were present in each febrile paroxysm and absent in the intervals. They were readily demonstrated by dark-field illumination, but with difficulty by staining methods, probably on account of a strong tendency to fragmentation. Blood cultures and inoculations of animals with the blood were negative.

2. The administration of salvarsan was followed by immediate cessation of the paroxysms.

3. An abortive case of rat-bite fever is reported.

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THE CAUSE OF GASTRIC ULCER*

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A great many theories have been advanced concerning the cause of gastric ulcer. The main feature of most of these theories is that there is a decreased resistance of limited areas of the gastric wall followed by the digestion of these areas by the unrestricted action of the pepsin. The investigation reported in this paper is concerned with the cause of this diminished resistance. It has been recognized for a long time that the resistance to the action of the digestive juices of limited portions of the mucosa of the stomach is decreased by cutting off the blood supply to these portions as, for example, by a clot in a small blood vessel (thrombosis) or by the ligation of the vessel. Under such conditions the area is digested by the pepsin with the formation of an ulcer. The decreased resistance of the areas rendered anemic by cutting off the blood supply has usually been attributed to the deprivation of the areas of nutrition. The frequency of the occurrence of gastric ulcer among anemic persons has led many to consider anemia a predisposing factor in the production of ulcer. Lesions produced in the mucosa of normal healthy animals heal, as a rule, with more or less ease. If, however, the animal is rendered anemic by bleeding or by the introduction of some hemolytic agent, lesions in the gastric mucosa heal very tardily. When the blood supply to a portion of the mucosa is cut off, among other things, the part is deprived of oxygen, and for that reason the oxidative processes are decreased.

Araki[1] showed that the oxidative processes are decreased in rabbits rendered anemic by bleeding. In

7. Surveyor, N. F.: Lancet, London, 1913, clxxxv, 1764.
8. Dalal, A. K.: Practitioner, London, 1914, xcii, 449.

* From the Physiological Laboratory of the University of Illinois.

1. Araki: Ztschr. f. physiol. Chem., 1894, xix, 424.

phosphorus poisoning the oxidative processes of the body are decreased,[2] and it has been observed that under these conditions the tendency of the tissues to undergo autolysis is increased.[3] In diseases of the circulatory and respiratory systems, where the amount of oxygen is decreased and hence the oxidative processes are decreased, there is a great tendency of all the tissues to undergo self-digestion.[4] These facts would seem to point to some relation between the oxidative processes of the body and the resistance of the tissues to the digestive action of the proteolytic enzymes. Burge[5] showed that pepsin as well as trypsin is easily destroyed by oxidation. Lillie[6] showed that the cells of the gastric mucosa possess intense oxidative properties.

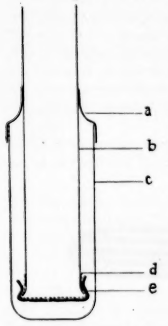


Fig. 1.—Diagram of apparatus: *a*, rubber cuff holding glass vessels *b* and *c* in position; *d*, platinum mesh; *e*, piece of gastric mucosa.

In view of the fact that pepsin is easily destroyed by oxidation, that the cells of the mucosa possess oxidative properties, and that these cells become easily digested when these properties are decreased, the hypothesis is advanced that the mucosa is not digested under normal conditions because the pepsin immediately in contact with the wall of the stomach is rendered inert by the oxidative processes of the cells. This theory assumes that normally a balance exists between the oxidative processes of the cells of the mucosa and the digestive action of the pepsin in the stomach. If this balance is destroyed, as for example by depriving a limited area of oxygen by cutting off the blood supply, thereby decreasing the oxidative processes of the area, this area should be digested by the pepsin with the production of ulcer. That the mucosa is digested with resulting ulcer under such a condition has been verified by many observers.

REPORT OF EXPERIMENTS

The following experiments were devised to imitate the protective mechanism as set forth in the foregoing hypothesis:

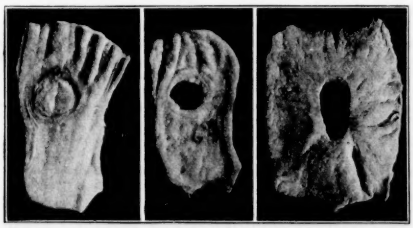
In Figure 1, *a* is a rubber cuff holding vessels *b* and *c* in position as indicated; *d*, a piece of platinum mesh tied over the end of cylinder *b*, and *e* a piece of gastric mucosa of the dog tied over the platinum mesh. Before the platinum mesh was tied over the end of the cylinder, platinum black was deposited on it by means of the direct electric current. To 15 c.c. of gastric juice of the dog, 15 c.c. of hydrogen peroxid were added, and the resulting solution was made acid with hydrochloric acid to the same extent as the original gastric juice. This solution was poured into cylinder *b*, and the whole preparation placed in a water bath at 38 C. (100.4 F.). Immediately after the solution was poured into the cylinder, an evolution of oxygen gas was observed in the region of the platinum mesh. This, of course, was due to the decomposition of the hydrogen peroxid by the platinum black. Thus the mucosa was exposed to the action of the gastric juice in the presence of atomic oxygen. After six hours, the piece of mucosa was removed from the tube and photographed (Fig. 2 *A*). It may be seen that the central circular area exposed to the action of the gastric juice in the presence of atomic oxygen had not been digested.

Another preparation, similar to the one described, except that no platinum black was deposited on the platinum mesh, was made and placed in the water bath at 38 C. On addition of the gastric juice diluted with hydrogen peroxid no oxygen was given off, there being no platinum black on the mesh; hence this piece of mucosa was exposed to the action of the gastric juice in the absence of atomic oxygen. Figure 2 *B* is a photograph of the piece of mucosa after the preparation had been in the bath for sixty-five minutes. It may be seen that the central circular area exposed to the action of the gastric juice had been completely digested with the formation of a hole. In Figure 2 *A* the oxidation produced by the atomic oxygen liberated at the surface of the dead mucosa protected it, while in Figure 2 *B*, no such protection being afforded, the exposed circular area was readily digested with the production of what corresponds to gastric ulcer. Figure 2 *C* is a perforating ulcer of the stomach shown for comparison.

The following experiments were carried out on unicellular organisms to show that when they are introduced into a solution of trypsin they protect themselves from being digested by means of their oxidative processes:

One hundred c.c. of clear pancreatic juice were collected from a cannula in the pancreatic duct of a dog as the result of the repeated injections of secretin into the jugular vein. The trypsinogen in this juice was converted into active trypsin by the addition of 5 c.c. of enterokinase. The resulting trypsin solution was sterilized by exposing it for a few minutes to ultraviolet radiation. It was then placed in a collodion tube and dialyzed against 5 liters of distilled water for twenty-four hours at 10 C. (50 F.) to get rid of most of the dissolved salts.

Five c.c. of the activated dialyzed juice were introduced into each of two long test tubes. Five drops of water containing a great number of living parameciums were introduced into one tube and another five drops of water containing dead parameciums, killed by exposure to ultraviolet radiation, into the other. Both tubes were placed in a water bath at 30 C. (86 F.). At the end of three hours, the parameciums, killed by exposure to ultraviolet radiation before being introduced into the pancreatic juice, were completely digested, while those introduced alive were as active as at the beginning of the experiment. At the end of seventy-two hours, when the experiment was discontinued, these parameciums were still alive and very active.



A B C

Fig. 2.—Pieces of gastric mucosa. The central areas of *A* and *B* were exposed to the action of gastric juice, *A* in the presence of atomic oxygen, *B*, in the absence of atomic oxygen. *C*, perforating ulcer of the stomach.

These two experiments show, as has been recognized for a long time, that living cells are very resistant to the action of proteolytic enzymes, while dead cells are digested with more or less ease.

2. Welsch: Arch. internat. de pharmacod. et de therap., 1905, xiv, 211. Ries: Berl. klin. Wchnschr., 1905, xlii, 44a, 54.
3. Jacoby: Ztschr. f. physiol. Chem., 1900, xxx, 174.
4. Schlesinger: Beitr. z. chem. Physiol. u. Path. (Hofmeister's), 1904, iv, 87.
5. Burge: Am. Jour. Physiol., 1915, xxxvii, 462.
6. Lillie: Am. Jour. Physiol., 1902, vii, 413.

The digestive strength of the trypsin and the resistance of the living parameciums having been determined by these control experiments, an attempt was made to lower the resistance of the organisms to tryptic activity by decreasing their oxidative processes. Five c.c. of the activated dialyzed pancreatic juice were exposed to the radiation from a quartz mercury-vapor burner for one hour to destroy the trypsin. Living parameciums were introduced into this inactive juice, and hydrogen gas was bubbled through it for ten hours at 30 C. The purpose of bubbling the hydrogen gas through the juice was to deprive the parameciums of most of the oxygen dissolved in the liquid and thus decrease the oxidative processes of the parameciums. At the end of the ten hours the organisms were alive and active. This experiment shows that the hydrogen gas bubbled through the liquid was not injurious to the parameciums and that there remained in the liquid sufficient oxygen for the life processes of the organisms.

Five drops of water containing parameciums were introduced into 5 c.c. of the activated dialyzed pancreatic juice. Hydrogen gas was bubbled through this liquid as it had been through the inactive juice containing the parameciums. The organisms were observed under the microscope at frequent intervals during the experiment. After about two hours the animals were observed to move less rapidly than at the beginning of the experiment. A little later these slowly moving organisms became more transparent and moved more slowly. As digestion proceeded, the transparency of the parameciums increased, and at the end of the third hour the partially digested organisms appeared as shadows. About half an hour later these parameciums had been completely digested and had gone into solution. These organisms were literally digested while alive and killed by the action of the trypsin itself in the process of digestion.

The preceding experiment was repeated, and when the animals were partially digested, the bubbling of hydrogen gas through the liquid was discontinued and the bubbling of oxygen gas was substituted. When this was done, the organisms that had not been too much digested were revived, and lived on as normal animals.

These experiments show that the resistance of these unicellular organisms to the digestive action of trypsin is greatly reduced when their oxidative processes are decreased, and that their resistance returns when the oxidative processes are restored. The results obtained on these living unicellular organisms would appear to lend support to the hypothesis advanced in explaining the resistance of the living cells of the gastric mucosa to the digestive action of pepsin.

CONCLUSIONS

The decreased resistance of a circumscribed area of the stomach to the digestive action of gastric juice is due to a decrease in the oxidative processes of the cells of the area. Gastric ulcer is due to the subsequent digestion of the area by pepsin.

The resistance of unicellular organisms (parameciums) to the digestive action of the proteolytic enzymes can be increased or decreased by increasing or decreasing the intensity of the oxidative processes of the organisms, the greater the intensity of the oxidative processes the greater the resistance, and vice versa.

The Soul of Enjoyment.—Health is the soul that animates all enjoyments of life, which fade and are tasteless, if not dead, without it.—Sir William Temple.

DISCISSION AND ADJUSTMENT OF AN INTRA-UTERINE STEM VERSUS DILATION

TO OVERCOME STENOSIS OF THE CERVICAL CANAL

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Next to curetting, dilation of the cervical canal, principally to overcome sterility, is the operation most frequently done without proper indication.

Those who have made observations will probably concede that in 75 per cent. of patients so treated, the intervention is unwarranted, because of absence of narrowing of the cervical canal, acute flexion, or azoospermia in the husband.

Let us take for granted, however, that there is an indication present: the cervical canal narrowed, or an acute flexion. Is cervical dilation, then, really the best means of giving permanent relief?

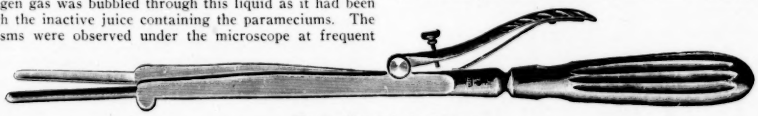

Fig. 1.—Simpson's hysterotome.

Judging from my personal experience, the question must be answered negatively, since it will be found in many cases that within from two to four months the cervical canal has again become constricted. There is, however, a method of intervention which will positively obviate this.

Cervical discission with adjustment of an intra-uterine stem will give such guarantee.

With the patient in the lithotomy position, the cervix, having been exposed with vaginal retractors, is drawn down and steadied with bullet forceps. Then with a Simpson hysterotome (Fig. 1) set with the thumb-screw before it is introduced, in order that the depth of the discission may be gaged, the cutting blade being held firmly at the chosen part, the handle is firmly depressed and the instrument withdrawn slowly. The cervical canal should not be dilated before the operation, lest it confuse the operator as to the extent of the discission advisable.

Fig. 2.—Uterine stem; hollow part on right, solid part on left.

I prefer to make the discission on the anterior and posterior surfaces of the interior of the cervix, since there is no danger of cutting vessels there, whereas on one occasion I had a profuse and serious hemorrhage by cutting laterally.

When the discission has been made, an intra-uterine stem (Fig. 2) of suitable size is adjusted. I have these stems made in various sizes. They are of hard rubber.

The lower part, through which the retaining suture of very heavy silkworm gut is passed, is solid; but the upper part is hollow, making it as light as possible, and preventing the weight of the stem, by bearing on the suture, cutting downward, which is frequently the case with the heavier glass stems used by Baldwin. I have found also the solid rubber stems too heavy for my purpose, that of leaving the stem in situ for about six weeks.

The suture is fastened by shot, beneath which a small lead plate is placed to prevent the shot from

burying itself in the cervical tissue. It is easily removed at the desired time, and one may be sure that the cervical canal will then not again contract as in a simple dilation.

The stems, for purposes of sterilization, are kept in compound solution of cresol or a saturated phenol (carbolic acid) solution.

39 East Sixty-First Street.

BULLET LESION OF CAUDA EQUINA

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While bullet lesions of the cauda equina might be of frequent occurrence in time of war, they are unusually rare in time of peace. Thus Braun[1] saw but one case in twenty-five years in one of the large Berlin hospitals, and Chipault[2] says that both vertebral and spinal cord gunshot lesions are very rare, not only in every day practice, but even in time of war.

The literature, therefore, on gunshot wounds of the cauda equina, to be reported below, is very scarce indeed. Serious as these lesions have been in the majority of cases, their prognosis has been and is much more favorable than similar spinal cord lesions, notwithstanding the length of time in which the bullet might be lodged within the cauda.

In the present case, it remained there for six years, when it was finally removed with remarkable improvement in the subjective and objective conditions of the patient.

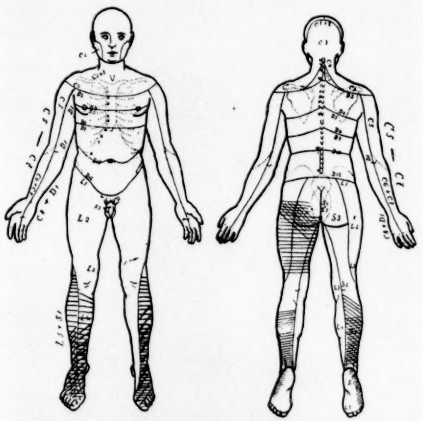

Fig. 1.—Areas in which there was reduction of sensibility: horizontal shading, touch and pain sensations; diagonal shading, temperature sensation.

REPORT OF CASE

History.—Man, aged 28, entered Cook County Hospital, Sept. 2, 1915, complaining of pain in the left lower extremity. The pain would "jump" from the left buttock to the left popliteal region, whence it would reach the left little toe and spread all over the foot and the rest of the toes. It would stop for about five or ten minutes, and then start again. The patient had to take morphin, sometimes as much as 30 grains daily; he drank beer, whisky, even wood alcohol, in fact, anything he could get hold of, to stop the unbearable pain. He could not sleep nights, could not find rest in the daytime, and could not do his work (that of a watchman), but was able to walk.

The pain originated six years ago after he had been shot in the back. One attempt to remove the bullet, four hours after he was shot, was entirely unsuccessful. The patient applied afterward about five times to the Cook County Hospital with a request to have the bullet removed, but each time operation was refused, the last time about three years ago.

In addition to the pain the patient felt weakness, especially in the left foot, which started to "give way" about ten months ago, and lately the weakness became so great that he was afraid to walk on a slippery day. He had to be careful in walking, as the right toes would "kick" the ground, and cause frequent damage to his shoes. To avoid kicking the ground he had to raise the right foot higher, while the left foot would turn inward. He was lame, as the body weight was thrown toward the left. Following the shooting, the patient immediately became paralyzed in both lower extremities. The paralysis was combined with anesthesia and loss of sphincter control. A month later cystitis developed which persisted for two years, during which time there also was loss of sexual power, though erections and desire were present. He could not move around for two years, and had to be "carried all this time in a rocker." Aside from the shooting accident, there was nothing of importance in the patient's previous history. Venereal diseases were denied; his wife had had no miscarriages; there were two healthy children.

Examination. — This revealed a well nourished white man with normal cranial nerves, normal heart, normal mentality and normal condition of the genito-urinary organs.

The *right* thigh and the *left* leg showed muscular atrophy with a clawlike position of the left toes. Measurements of the thighs, 12 inches above the external condyle, gave 18 inches for the right, and 19 for the left; the calf muscles, 12 inches above the malleoli, gave 12¼ for the right, and 11¼ for the left. The muscle power in the extensors and abductors of the left *leg* was much stronger than on the right, while the left leg muscles (the gastrocnemius) were somewhat weaker than the right ones.

The tendon reflexes, patellar and the Achilles tendon, were absent on the left, and on the right side only the patellar was present. The sensibility was merely reduced, for pain, touch and temperature in the areas supplied principally by the last two lumbar and first two sacral roots (Fig. 1). The electric examination showed complete reaction of degeneration in the left posterior tibial and left gastrocnemius, and a partial reaction of degeneration in the right extensors of the leg. Besides motor, sensory and electric changes, there were also present vasomotor and trophic disturbances. The former were represented by excessive sweating of the left foot, the latter (trophic) by the atrophies and several scars from burns caused by leaning against a radiator, the heat of which was not felt by the patient.

A combination of such findings suggested a scattered peripheral lesion of some of the nerves and muscles of the lower limbs which resulted in a peculiar clinical picture: atrophy of the right thigh, of the left leg, of the small muscles of the left foot, combined with severe pain in the left leg and motor weakness in the right leg. In addition, there were present localized electric and vasomotor changes coupled with bilateral loss of Achilles and unilateral loss of (right) patellar reflexes. Such a scattered combination of atrophies did not

1. Braun, W., and Lewandowsky, M.: Beiträge zur Frage der operativen Behandlung der Rückenmarksschüsse, Deutsch. Ztschr. f. Chir., 1908, xl, 115.
2. Chipault, in Le Dentu and Delbet: Traité de chirurgie clinique et opératoire, Paris, 1897, iv, 881.

conform with any known and well established types of muscular atrophies, dystrophies or arthritic myopathies, but plainly indicated involvement of some of the motor and sensory roots of the cauda equina that supply the lower limbs with motion and sensation. The nerves involved (right crural and left posterior tibial) indicated a lesion of the lower four lumbar and of the first sacral roots, while the sensory disturbances indicated the involvement mostly of the fourth, fifth lumbar and first sacral roots. As almost all the lumbar roots were involved, it was evident that the lesion, the seat of the bullet, was high up, at the level of the second or third lumbar root, either of which evidently was caught with its fellows on their way down to the intervertebral foramina. As the second lumbar root leaves the spinal canal between the second and third lumbar vertebrae, it was proper to assume the seat of the bullet to be at the level of the second or third lumbar vertebra. A roentgenogram by Dr. E. S. Blaine (Fig. 2) showed the bullet "apparently inside the spinal canal, at the level of the center of the third lumbar vertebra. There is also a slight fracture of the superior left auricular process and adjacent lamina of the fourth vertebra where the bullet entered."

As the bullet was in the indicated place for six years, it was easy to understand the cause of the atrophies, of the sensory disturbances, of the motor weakness, etc. The total paraplegia, the anesthesia and the loss of sphincter control which were present at the time of the accident were probably due to a traumatic myelitis or to the attempts to remove the bullet. At any rate, the symptoms of the spinal cord lesion cleared gradually away, and at the time of our examination there was a picture solely of lesion of the cauda equina, which, however, showed some peculiarities which will be mentioned later on.

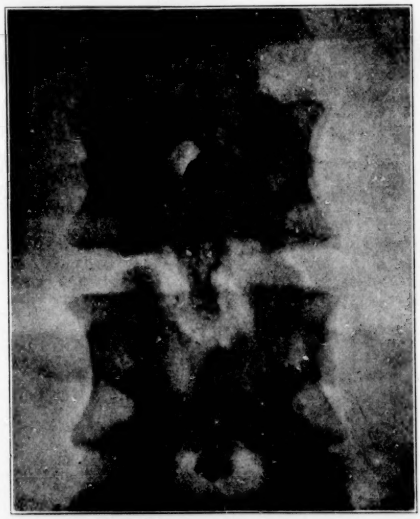

Fig. 2.—Roentgenogram showing location of bullet.

Operation and Result.—The patient requested an operation in the hope of getting relief from the pain. In view of possible formations of scars around the bullet we were not sure whether an operation, successful as it might have been, would give him the desired relief. Yet the patient was willing to take chances, and the operation was performed by Dr. Allen B. Kanavel, Sept. 24, 1915. A curved incision was made from the first lumbar to the first sacral spinous process. The spinous processes of the second, third and fourth lumbar vertebrae were exposed and removed. The laminae of the same vertebrae were removed and the dura exposed. The dura was split and dissected free from adhesions to the cauda. The bullet was found at the level of the third lumbar vertebra, surrounded by two solid scars. It was carefully dislodged with blunt dissectors and removed. The slightest possible injury to the surrounding tissues was carefully avoided.

The operation was followed by numbness in the genitals, buttocks, about the anus, and by retention of urine for about six days. Four weeks after the operation the wound cleaned up, and up to November 19, that is, for about seven weeks, there still was severe pain in the legs which, however, was gradually disappearing and the patient was getting firmer on his feet. Two months after the operation the pain disappeared entirely, the gait became practically normal, the calf muscles increased in volume by one inch, the pain sensation was found to be normal—but only in the right leg—while in other areas the sensibilty showed the same disturbances as before the operation. No change was found in electric findings, in the reflexes or in the muscle power. The improvement was so marked that the patient insisted on leaving the hospital and felt able to resume work.

COMMENT

There are certain peculiarities in this case which we should like to point out. The bullet was lodged in the upper portion of the cauda equina where all the roots, on their way down, are massed together, forming with the surrounding membranes a strand resembling in external appearance the spinal cord. A bullet lodged in this mass of roots ought to affect them all, and give a clinical picture of total lesion of the cauda equina, namely, a flaccid atrophic paralysis of the entire musculature of the lower limbs, with their anesthesia, etc. In our patient the affection of the cauda equina was partial, only some of the nerve roots having been involved, those of the crural on the right, and of the posterior tibial on the left. Therefore the high seat of lesion does not exclude the possibility of a partial cauda equina lesion.

Secondly, the bullet was lodged within the canal, its neck having been caught and surrounded by the dura, and two large solid scars were compressing the roots. A question arose whether the patient's troubles were not caused by these scars as much as by the bullet, and whether even a successful removal of the bullet would bring about the cessation of the pain. The latter, during the first few weeks following the operation, was as severe as ever, but later on was gradually subsiding until it finally disappeared entirely. The possible scar formation may be one of the serious objections to an operation like that in our case, yet with care not to cause trauma to nerve tissue, as it was done by Dr. Kanavel in this patient, excellent results can be obtained, notwithstanding their presence.

The most remarkable feature is the rapid progressive improvement in the patient's subjective condition, regardless of the fact that the operation took place six years after the injury. Chipault[3] speaks of a case by Delorme in which the bullet and bone scar were removed seventeen years after a gunshot wound, and Ollivier[4] describes a cauda equina lesion by a bullet which remained there for nine years, but was not removed. The symptoms were urinary incontinence, and complete anesthesia of the postero-internal and

3. Chipault, quoted from Krajewsky: Neurol. Centralbl., 1907, p. 874.

4. Ollivier, G. P.: Traité des maladies de la moelle épinière, Ed. 3, Paris, 1837, i, 358.

anterior portions of the thigh, of the penis and scrotum, but there was no motor paralysis of the lower limbs. Ollivier, writing about the case in 1837, evidently considered it as a curiosity, as he could not understand the absence of paralysis in the presence of spinal cord symptoms, as bladder disturbances, but adds that such a strange combination evidently occurred only when the lumbar region is involved. In 1849 Hutin[5] described a bullet lesion of the cauda equina of fourteen years' duration. The bullet was not removed, but the paralysis slowly disappeared in the left leg, and remained in the right. The postmortem showed the bullet implanted in the vertebral canal, where it cut the right half of the spinal cord, or rather that of the cauda equina, leaving the left half intact.

Leyden[6] mentions two cases of bullet lesions of the cauda equina reported by Socin and Klebs. In one, the lesion was to the right of the fourth lumbar vertebra, in the other above the right posterosuperior spine. The symptoms gradually disappeared, though the bullets were not removed. In Lamb's case[7] the patient carried the bullet in the cauda equina for eighteen and one half years, and it was found at the necropsy at the level of the fifth lumbar vertebra, where it descended from above (the fourth lumbar) following suppuration.

The patient suffered from partial paralysis of the left leg, which set in nine years after the shooting, from continuous pain in the back and the left leg, urinary disorders and atrophy of the right leg. In 1904 Weisenburg[8] reported a case of cauda equina lesion by a bullet which perforated the fifth lumbar vertebra (loss of sphincter control the first two weeks, loss of Achilles jerk, increased bilateral knee jerk), but the bullet was not located. In the same year Englemann[9] reported a case in which the bullet entered the median line between the fifth lumbar and the first sacral vertebrae. The patient was operated on five days later, and sixteen days after the operation the pain totally disappeared, though the sensory disturbances were still present four months later around the arms.

Finally the cases of Raymond and Rose, and of Raymond must be mentioned. In the former[10] the bullet, as in our case, was located at the level of the third lumbar vertebra, and gave practically identical symptoms: lessened motor power in the lower limbs, atrophy of the right thigh and antero-external muscles of the leg, loss of the right patellar and Achilles jerks, which were followed six weeks later by loss of sphincter control, and anesthesia of the perineum, scrotum, penis and posteromedian surface of the thigh. The latter symptoms were due to the sinking of the bullet to the first sacral vertebra. At the operation, which was done about three months after the injury, the bullet was found to be movable and removed, followed by improvement in the patient's condition. Another patient of Raymond[11] had the bullet also at the level of the third lumbar vertebra, and was operated on about three months after the injury. Here also the bullet was movable and removed, with some improvement in the patient's condition.

These are practically all the cases that can be found in the literature in reference to the bullet lesions of the cauda equina. Of all the cases only those of Raymond bear some resemblance to ours, yet there is a difference in the length of time the lesion lasted: in our case, six years; in Raymond's, only three months. The results, however, were equally good in our case, though the operation was much more difficult and complicated.

3059 Jackson Boulevard.

5. Hutin: Jour. de méd. et de chir. prat., 1849, xx, 512.
6. Leyden, E.: Traité clinique des maladies de la moelle épinière, Translated by E. Richard & C. Viry, Paris, 1879, p. 262.
7. Lamb, quoted from Vincent, E.: Des plaies par coup de feur de la moelle épinière, Rev. de chir., 1892, p. 89.
8. Weisenburg, T. H.: A Clinical Report of Three Cases of Injury of the Lower Spinal Cord and Cauda Equina, Am. Jour. Med. Sc., May, 1904, Case 2.
9. Englemann, Fritz: Akute Kompression der Cauda Equina durch ein Projektil. Operation; Heilung, München. med. Wchnschr., 1904, No. 51, p. 2292.
10. Raymond and Rose: Compression des racines de la queue de cheval par balle de revolver, laminectomie, guérison, Rev. neurol., 1906, p. 381.
11. Raymond, F.: Sur quelques affections de la queue de cheval, Arch. gén. de méd., 1906, p. 1940.

PUBLIC HEALTH MEASURES IN RELATION TO VENEREAL DISEASES*

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"Social hygiene" is an inclusive phrase covering activities of which the campaigns against venereal diseases and prostitution are only a part, but necessarily in past years the most prominent part. Eventually the social hygiene movement will become recognized by the public as a constructive effort to promote all those conditions of living, environment and personal conduct which best protect the family as an institution and secure a rational sex life for the individuals of each generation.

Prior to 1900, certain scientific and sociologic data were recorded in their bearing on the reduction of syphilis and gonorrhea, but no effective public health measures were instituted. From 1900 to 1912, existing facts were marshaled for educational campaigns, and new facts of the highest importance were discovered. In the medical field there were added new observations of gonorrhea, its ravages, communicability and treatment, the discovery of the organism of syphilis in 1905, the development of the Wassermann reaction in 1907, the preparation of salvarsan for the treatment of syphilis in 1910, and in 1911 the successful experimental inoculation of syphilis and artificial cultivation of its organism. These advances made possible by 1912 a practical campaign against venereal diseases as soon as public opinion should be developed in support of it. In the law-enforcement field, the records of the past twenty years show many persistent and self-sacrificing efforts to utilize existing statutes and to devise new legislative and administrative measures for the repression of commercialized practices inimical to high standards of public morality and health. In the religious and ethical fields, likewise, notable efforts have been made to bring about recognition of the importance of good environment and personal observance of moral living as forces in any campaign for the ultimate eradication of venereal diseases and prostitution as great social ills. The organization and extension of social hygiene society campaigns, and the promotion of similar work by numerous other national

* Presented at the Pan-American Scientific Congress, Washington, D. C., Dec. 30, 1915.
* Because of lack of space this article is abbreviated in THE JOURNAL. The complete article appears in the author's reprints. A copy of the latter will be sent by the author on receipt of a stamped, addressed envelope.

and state associations, have now prepared the way for a serious attempt to deal effectively with this great medical-social problem.

Syphilis and gonococcus infections are foremost among a group which may be designated social as well as individual disorders affecting people's lives in many tragic ways, and therefore to be attacked through social treatment as well as medical treatment. It will be profitable to summarize at this point certain facts. Venereal diseases are communicable infections due to identified organisms; their methods of transmission are known, and a practical laboratory and clinical technic has been worked out for diagnosing each of them; they are widely prevalent throughout the world and are not limited to any race, sex, age or condition of people; they find their chief opportunity for dissemination in the sex relations of infected individuals with other individuals who are susceptible; they are largely but not exclusively transmitted through the promiscuous sex relations defined as prostitution and condemned by society as harmful alike to the health, the morals and the social progress of a people; recent methods of therapy make practicable the shortening of the period of infectivity and improve the chances of ultimate recovery of the patient submitting to early and thorough treatment; once contracted, they may run their course to practical recovery with or without medical assistance, but under present conditions an unknown and large percentage of those infected never completely regain their health or cease to be carriers, and, therefore, are a continuous menace to society. Syphilis in its early stages is especially a public danger, while in its late manifestations the menace is largely confined to the individual himself; gonorrhea, on the contrary, while a public danger at all times, is particularly damaging to the individual in its early acute development, and later becomes an insidious danger to those intimately associated with him.

With these general facts before us, the medical lines of attack are clear: 1. We must seek by cooperation with or control of the infected individual to prevent his infecting others. 2. We must endeavor by education and administrative measures to enable uninfected individuals to protect themselves against infection. 3. We must develop, so far as may become possible, the defenses of society calculated to prevent the recrudescence of venereal diseases in any community which is measurably reducing them.

The measures which have been advocated to meet this program may be grouped as follows: (1) management of existing cases; (2) prophylactic measures; (3) measures contributing to their reduction and ultimate eradication.

MANAGEMENT OF EXISTING CASES

1. *Provision of public health laboratory equipment for free examinations for evidence of syphilis and gonococcus infections.*—So many state and municipal health laboratories in the United States have now established this work that its practicability has been demonstrated and its continuance assured. In 1914, the New York City Health Department examined 59,614 specimens, 75 per cent. of which were received from private physicians. The Massachusetts State Department of Health receives more than 1,000 specimens per month for its Wassermann laboratory, and has extended this service to patients of private physicians.

2. *Provision of ample facilities at public expense for clinical diagnosis and advice in cases of possible syphilis and gonorrhea.*

Interesting and encouraging experiments in this direction have been recently made. By the close of the current year, the New York City Department of Health will have aided, through its advisory clinic, more than 3,000 new patients.[1] The Oregon State Board of Health operates a similar department for diagnosis and personal advice, and in addition has developed an extensive correspondence with persons in all parts of the state who write for information. More than 5,000 interviews and letters have been handled in the past four years, the majority of individuals having applied after seeing one of the health board venereal-disease placards. With minor modifications of the general plan, a sufficient number of other health departments are now beginning this work to insure its success in the United States.

3. *Provision of adequate treatment of ambulatory cases free of cost to those requiring public assistance.*

Having provided laboratory and clinical facilities and medical advisers, it is essential to any effective administrative campaign that persons infected with syphilis or gonorrhea shall be given proper treatment and supervision until they are returned to health and are no longer a source of danger to others. These may be divided for practical purposes into ambulatory (those who may come to the physician's office or the dispensary for treatment) and hospital cases. Medical opinion has not been fully formulated as yet on what should constitute admission into these respective groups, but the prevalence of the diseases makes it mandatory that the ambulatory group shall be as large as possible.

Of the ambulatory patients, those who can pay for the services of private physicians are relatively of less danger to the community health than those who must depend on public assistance; but medical records show how very frequently the physician fails to study his venereal cases, and entirely neglects his responsibility for the protection of society and the patient's family. The highest efficiency of the private general practitioner in the treatment of venereal infections must be sought, because, with this more than with any other group of communicable diseases, the practitioner can be utilized as the representative of the health department during the indefinite periods of necessary surveillance.

Without attempting to estimate the percentage of venereal patients who can pay for their treatment and those who cannot, it is known that the proportion of the latter is high. It is also known that a certain percentage constitutes a middle group comprising those who can pay something; the evening pay clinic experiments have demonstrated this fact. Administrative efficiency demands just as good treatment for the indigent case as for the private pay case; administrative economy demands arrangement for such partial payment as may be practicable. In all cases, the interests

1. This number included men and women, 316 of whom came during the first six months in response to a small paid advertisement of free confidential advice carried by the health department in some of the daily newspapers publishing quack notices. These applicants for diagnosis and advice are told the nature of venereal diseases, the danger of improper treatment, and the necessity for strict adherence to their physicians' orders. The danger of discontinuing treatment and the unreliability of the so-called sex disease "specialists" are stated. The importance of continence for the sake of the individual and of society is emphasized. If applicants who require treatment cannot afford the services of a private physician, they are referred to a list of accredited clinics — public and private — for proper attention.

of good citizenship demand conditions under which the self-respect and privacy of the patient may be retained.

There is now being worked out in the United States a number of valuable experiments in free and pay clinics for venereal diseases, and evidence is being collected which demonstrates the need for the enforcement of standards for equipment, service and requirements for discharge of venereal patients from genito-urinary and gynecologic clinics. A recent survey[2] to determine how many clinics in New York were meeting the requirements of the Associated Outpatient Clinics reported only seven approved clinics for syphilis out of twenty-seven, and but four approved out of twenty-six clinics for other venereal diseases. Many of these could, with small effort, meet the requirements, but twelve were found hopelessly bad. Furthermore, in only two of the clinics was detailed analysis of a year's records possible without a prohibitive amount of work. The records of these two clinics showed[3] for gonorrhea only 9.7 and 9.4 per cent., respectively, dismissed as cured. These figures are probably fairly typical of every part of the United States. Dr. Davis of the Boston Dispensary reported 11.4 per cent. of 450 gonorrheal patients as cured; Dr. Sanford of the Lakeside Hospital Dispensary, Cleveland, reported a series in which 12 per cent. were cured. Equally unsatisfactory results have been found in studies of syphilis.

What this means to the public can perhaps be paralleled by the spectacular outbreak of smallpox which occurred in Montreal in 1887 when the panic-stricken inmates of a hospital, after exposure to an unrecognized case, were permitted by the authorities to scatter through the city with the result that several thousand persons developed the disease and many died. Outbreaks of venereal diseases are not spectacular or sudden, nor do the causal organisms find ready opportunity to attack new victims except through the intimate relations of sexual intercourse; but their insidious spread, aided by the prolonged periods of years during which infected individuals may be carriers, makes them far more dangerous than smallpox. In the development of adequate medical and social treatment of ambulatory venereal patients, we have presented to health departments a concrete problem for which solution is demanded by every interest, economic, social and moral.

4. *Provision of adequate hospital facilities, free of cost to individuals when necessary, for syphilis and gonorrhea cases in all stages in which hospital care is an advantage to the patient or a protection to the public.*

In a general way, what has been stated concerning private treatment, pay clinic, and free clinic service for ambulatory cases applies to similar classes of hospital cases. The hospital adds chiefly a bed and the more complete supervision possible through discipline and organized professional and nursing staffs. But these additions in certain manifestations of syphilis and gonococcus infection make all the difference between success and failure. Many experienced physicians believe that the intravenous administration of such remedies as salvarsan, when performed outside the hospital, is attended with serious risk to the patient. Furthermore, such treatment, under the adequate supervision possible in the hospital, is most likely to inhibit the transmissibility of the disease for a considerable period, or even to end its development in early cases. The treatment of many cases of gonococcus infection is surgical, and hospital care is therefore imperative; but there are others frequently denied admission whose prompt recovery and return to normal living and occupation without danger to family or fellow workmen would be greatly increased by those services which can be rendered only under hospital conditions.

There are other reasons why the hospital should be studied as an important factor in the administrative control of venereal diseases. An investigation now being conducted in New York City[4] has shown that of thirty general hospitals only ten receive patients with recognized cases of syphilis in actively infectious stages; but once admitted on some other diagnosis, twenty-seven give care and treatment, although only seventeen provide the service of a syphilologist. Only nine receive adult patients with gonorrheal infection needing hospital treatment, and two of this number specify that only surgical cases are accepted. Three city hospitals receive and treat active gonorrhea in little girls. Thirteen of the thirty will not receive medical cases with known complications of syphilis or gonorrhea. Yet during the past year, 2,607 syphilis cases were treated, according to the reports of only fifteen of these hospitals. Again it may be inferred that these conditions are probably typical of every part of the United States.

The investigation referred to will show the need of developing standard requirements for discharging venereal patients from hospitals. Five hospitals require before discharge of a syphilitic patient three tests, technically designated as (*a*) healed lesions, (*b*) entire disappearance of symptoms, and (*c*) one negative Wassermann; thirteen require none of these. One requires for the discharge of a gonorrheic patient two tests, (*a*) negative complement fixation, and (*b*) negative prostatic massage (for men) or negative cervical smear (for women); fifteen require neither of these. Ten hospitals refer discharged patients to social service departments for some form of follow-up observation. Both patients and public will profit by active health department supervision of conditions for clinic and hospital treatment and discharge of venereal patients.

5. *Extension of hospital social service work to patients with syphilis and gonococcus infection.*

The value of social service for dispensary and hospital patients has been generally recognized for practically every class of diseases except the venereal. To the pioneer activities of the Boston Dispensary in cooperation with the Massachusetts Social Hygiene Society, the social service work of the genito-urinary and syphilology divisions of the Massachusetts General Hospital, and the notable efforts of a few other institutions, the credit is due for the application of social service to syphilis and gonococcus infections. No unusual methods or expenditures are involved. Experienced workers have found it possible to obtain the social histories desired and to secure the interested

2. Barringer, B. S., and Platt, P. S.: A Survey of Venereal Clinics in New York City and a Statistical Efficiency Test, Social Hygiene, i, No. 3, published and reprinted by the American Social Hygiene Association, 105 West Fortieth Street, New York City.

3. The records of the two clinics were:

	Clinic A		Clinic B	
	Number	Per Cent.	Number	Per Cent.
Patients dismissed as cured.....	25	9.7	38	9.4
Ceased treatment improved.....	50	19.3	57	14.2
Ceased treatment unimproved..	184	71.0	308	76.4

4. A joint investigation by the Bureau of Public Health and Hygiene of the Association for Improving the Condition of the Poor, and the Committee on Public Health of the New York Academy of Medicine.

and intelligent cooperation of patients in implicitly obeying instructions for their own treatment and in bringing to the dispensary other members of their families for diagnosis and advice. This work is proving that in social service we have a weapon of very great importance in the battle against venereal diseases, and in addition a service for helpfully dealing with the personal, moral and social problems inevitably involved. The latter benefit probably outweighs the medical value of social service.

PROPHYLACTIC MEASURES

1. *Compulsory notification of syphilis and gonococcus infection to the health department for proper action in protecting the public, due precautions being taken to safeguard the rights and privacy of the individuals concerned.*

The right of society to demand the immediate reporting of each case of a dangerous communicable disease to the health authorities for such action as may be deemed necessary for public protection is established and enforced for many diseases. The notification of venereal diseases is now required by the laws of eleven states and a number of cities, but these laws have thus far not been enforced to any considerable extent. Partly this may be accounted for by the difficulties which operate against all morbidity returns, but largely it is due to three special factors: The public has been in ignorance of the nature and dangers of these diseases; the physician has believed that duty to his patient bound him to silence, and health departments have offered no practical program for dealing effectively with the problems presented by each case reported. None of these difficulties are insurmountable.

California made venereal diseases reportable by case number in November, 1910, for the purpose of developing a basis for correspondence with physicians on specific cases and the problems of public protection involved. New York City later required reports by names and address of all patients in public or charity hospitals and dispensaries, with the purpose of supplementing the work of the medical profession in private cases, by investigation and supervision of those under treatment in institutions which could not follow up their patients. The state of Vermont has enacted a new law[5] which requires the name, address, age and sex of each patient, and provides payment of the physician for reporting, and penalty for failure to report.

With complete notification by physicians and full cooperation with dispensaries and hospitals, a health department is in position intelligently to direct its work of protecting the public from all recognized cases. Reference is made below to measures proposed for securing information of other cases.

The logic of compulsory notification must be recognized. The desirability of proper data and the name of each patient being filed with the health department for identification and reference in future laboratory examinations and action, regardless of whether the patient may have changed physicians, is obvious. Evidence is not lacking to prove that patients receive the best assistance and the public receives the best protection when the physician and the health department work together in full knowledge of who the patient is, where he lives, and how he is occupied. It seems absurd to contend that health departments cannot be made just as trustworthy repositories for personal histories as doctors' offices, private laboratories and hospital wards. In time, it is probable that public opinion will demand that the health officer, as the representative of the people, shall be taken into consultation in dealing with venereal disease patients, just as he is now taken into the confidence of physicians dealing with tuberculosis, typhoid fever and other communicable diseases, which experience has shown may be treated by the private physician, provided the public interest is safeguarded through certain supervision by the health department. All the general arguments for complete reporting of other communicable diseases apply to the venereal diseases.

2. *Instruction of persons exposed in measures for the protection of themselves and their immediate associates.*

To the extent made possible by notification, the most important work in prophylaxis is the instruction of the persons exposed. This implies individual instruction in accordance with the facts for each case. This in turn demands competent, tactful, sympathetic advisers, with time available for getting the facts in each case and using them effectively with the individual. It is in this field especially that the advisory clinic and social service workers are needed. It has been demonstrated that the people will accept and even welcome this service, and that administratively and financially it is practicable.

3. *Promotion of continence as the greatest factor in personal prophylaxis.*

Turning from the problem of those known to be infected, or definitely exposed, to the unknown majority of the population who should be protected by such prophylactic measures as they may apply continuously themselves, or by which they may be protected through official and community action, sexual continence must be acknowledged as the one from which the greatest reduction of venereal diseases would result—provided it could be generally enforced outside of marriage. Evidence is accumulating which shows that the formation of public opinion in favor of continence outside of marriage is steadily gaining ground.

4. *Dissemination of general information concerning syphilis and gonorrhea and their methods of transmission.*

All the arguments which favor the dissemination of information regarding any disease apply to the dissemination of information regarding venereal diseases, but it does not follow that the same methods should be used. Without endeavoring in this paper to discuss the details of this important factor in prophylaxis, it may be said that, through health departments and many other agencies, the work has been well begun. The American Social Hygiene Association[7] has established a national clearing house for information, and many state and city social hygiene societies have been organized to do intensive local work. Other organizations, notably the American Medical Association, have published and distributed large amounts of literature.

5. Sections 3 and 4 of "An Act for the Prevention of Venereal Diseases" effective as a state law, June, 1915, read as follows: "A physician who knows or has reason to believe that a person whom he treats or prescribes for is infected with either gonorrhea or syphilis shall immediately report the name, address, age and sex of such person to the secretary of the State Board of Health, for which report he shall receive the sum of twenty-five cents, to be paid by the State Board of Health. A physician who fails to make such report shall be fined not more than two hundred dollars.

"The State Board of Health shall make and enforce such rules and regulations for the quarantining of cases of gonorrhea and syphilis reported to it as may be deemed necessary for the protection of the public. Said board shall not disclose the names or addresses of such persons reported or treated to any person other than a prosecuting officer or in court on prosecution under this act."

7. American Social Hygiene Association, 105 West Fortieth Street, New York City.

5. *Utilization of approved medical prophylactic measures under adequate restrictions and supervision.*

That society is not opposed to the popularization of methods for preventing the spread of diseases by means of medical applications, or even to the furnishing at public expense and compelling the use of medical prophylactics, is amply demonstrated by numerous instances. The requirement of vaccination against smallpox, the distribution of diphtheria antitoxin, and the preparation and administration of antirabic treatments are concrete illustrations. The opposition to medical prophylactic measures for venereal diseases is based primarily on the public determination to safeguard something it holds far more precious than health, namely, the morals of the community. The approval accorded the use of silver nitrate preparations in preventing gonococcus infection of babies' eyes is direct evidence that objections to the parallel preventive treatment for syphilis and gonorrhea in adults are not based on medical grounds.

Where it is possible, as in the army and navy, for competent officers to instruct men individually in the nature of venereal diseases and the immediate application of medical prophylactics in the event of exposure, some reduction in their prevalence has been obtained; and these measures combined with rigid requirements for reporting and follow-up preventive treatment at military quarters have very largely reduced them.[8] Some of the most experienced officers, however, believe treatment as applied by the medical staff at the military dispensary is the essential factor, and favor the use of the prophylactic packet only by those men who are granted more than ten hours' absence and who cannot be trusted to remain continent. This is such a small number that some officers are opposed to any recognition of self-applied medical prophylactic measures.

In civil life, the difficulties of instructing the general public in the uses and limitations of self-applied medical prophylactics are greatly increased. The moral arguments against attempting any such instruction are admittedly logical and strong; but discarding for the moment the relations of medicine to morals, there remains the argument that such prophylactic measures can succeed in only a percentage of those cases in which adequate instruction has been given and the individual has the intelligence to apply properly the medical preparations immediately or within a few hours after exposure. Obviously these requirements are not likely to be met by the immature boys, the drink-befuddled men, the defective girls, the average prostitutes, who constitute the bulk of the citizens who might be protected by this method. It seems apparent that medical prophylaxis can wisely be made use of only under the advice of physicians who are fully informed of the circumstances in each case, and have opportunity to observe each individual until the danger of infection has passed.

If personal supervision by a physician is an essential for the effective use of medical prophylaxis, it becomes undesirable to advocate publicly such measures for attempted application by individuals without such supervision. The private practitioner, the dispensary officer and the health department staff constitute the qualified persons for the employment of medical treatment designed to prevent the development of venereal diseases *after* exposure. The avoidance of exposure constitutes the best prophylactic measure to be advocated *before* exposure and, since there are no practical methods by which the layman can recognize persons who are infected, this means the practice of continence prior to marriage and selection of a marriage mate who has neither syphilis nor gonorrhea in a communicable form. The need for ample facilities at public expense for advisory clinics and treatment of ambulatory cases has been previously mentioned. These facilities should be extended to include applicants who apply immediately after exposure, as well as those who apply when infection has reached a well-defined stage. As in the use of a medical prophylactic for the gonococcal infection of babies' eyes, so in the common venereal infections the emphasis should be placed on popularizing the need for early and competent advice and treatment, rather than on methods of self-medication.

8. Thus far the most comprehensive and successful work in the reduction of venereal diseases has been done by the army and navy officers. The extension of their examination methods to applicants for enlistment in all of our large cities is developing a fund of accurate and valuable knowledge concerning a large class of the civilian population. This paper does not permit of quotations from reports, but great benefit may be expected from the cooperation of the military and civil medical authorities in further studies.

MEASURES CONTRIBUTING TO THE REDUCTION AND ULTIMATE ERADICATION OF VENEREAL DISEASES

For the purposes of this paper, the measures contributing to the reduction and ultimate eradication of venereal diseases may be passed over with enumeration of the principal ones which every student of the venereal disease problem must recognize to be vitally important:

1. *The repression of prostitution through law enforcement.*

2. *The provision of ample facilities for wholesome play and recreation, and reduction of environmental and social conditions which encourage extramarital sex relations.*

3. *The elimination of alcoholic drinks.*

4. *Promotion of sex education and general standards of personal conduct which are in keeping with high moral principles.*

5. *The encouragement of early marriage after maturity has been attained, and promotion of economic and social conditions conducive thereto.*

OTHER MEASURES

An increasing number of experiments are being tried along lines not specifically mentioned in the foregoing presentation of the program for action reported by the American Public Health Association committee. The so-called health certificate for marriage, or "eugenic law" as it is popularly called, is one of these. The purpose of such laws is primarily to protect matrimony from communicable diseases, particularly venereal diseases, but the administrative basis for such a law has not been satisfactorily developed. Both for the sake of the contracting parties and the children who may be born to them, it is important to develop some plan to meet this purpose, and the private physician and the health department cooperating with the clergy can do a great deal in safeguarding marriage without any law. In foreign countries, as Denmark, Norway and Sweden, where laws of this character have been enacted, the basic principle has been that an individual infected with venereal diseases must not marry unless the other contracting party is informed and both have been given verbal warning of the dangers involved.

A second type of law designed to detect and inhibit the spread of venereal infection is being seriously

tried by the state of Pennsylvania, and New York, Philadelphia and other cities. The purpose is to eliminate, from the occupations connected with the preparation or serving of foods, persons with a venereal disease in communicable form. Thus far it is encouraging that among 40,000 examinations reported in New York, only 3.5 per cent. (including other infectious diseases beside syphilis and gonorrhea) have been "found in such a state of health as to make their employment unlawful." Applicants for pedler's licenses have been examined for venereal infection and either refused the license or given it conditionally on submission to adequate treatment. One such series of over 1,000 cases[9] showed only 8.4 per cent. positive for the Wassermann test for syphilis.

As a matter not of law but of public or business policy, many institutions require physical examination of employees, including tests for venereal diseases. The United States Army and Navy are doing notable work in their endeavor to eliminate from admission applicants with venereal infection. The Rochester Health Department through its infectious disease division is effectively cooperating with employers of men. Railroad and other business corporations with sick-benefit and pension systems, life insurance companies, and other organizations similarly protect themselves so far as practicable by examination of candidates for employment. Certain colleges include observation for venereal infections as a part of the required physical examination on entrance, and many hospitals require information on the diagnosis of each patient received, refusing admission to those with venereal diseases.

Many experiments have been made and will continue to be made to develop effective and safe methods for immunizing against syphilis, and especially against gonorrhea, but none of them have reached the stage of scientific recognition which warrants discussion of their administrative application. In venereal infections, as in other infectious diseases, according to the intelligence of the individual and his family, and the adequacy of the medical services provided, the patient may be allowed full liberty in the community or should be kept under close supervision by the health authorities. Obviously, there are certain occupations in which an infected person may engage without endangering others through the necessary relations of business. The night watchman, for example, does not present the same occupational problem as the barber or the waiter. Quarantine or other form of segregation during the entire period of danger to others is impracticable in any but the most dangerous cases. It is probable that, as the program for administratively dealing with venereal diseases progresses, ways for protecting the public from them will be devised without unduly limiting the liberty of any but the few who, through special circumstance, low mentality or exceptional antisocial tendencies, must be properly segregated as dangerous carriers. In dealing with tuberculosis, the people have decided that it is wise to appropriate immense sums for sanatoriums, for treatment, for labor bureaus to place convalescents in occupations which will safeguard the public and benefit the patient, and for dispensaries to begin and end the public supervision of infected individuals. Venereal diseases constitute an equally serious problem which the public must attack in an equally thorough manner.

Sterilization of infected persons has frequently been advocated to the confusion of the public health program, as it must be evident that artificial sterility, like the involuntary sterility due to gonorrhea, can do nothing in the campaign for prevention, except for the next generation by ensuring that no infected children will be born. The advocates of a number of measures such as this are confusing the venereal disease problem with the application of the principles of heredity.

Another proposal which seems unwise as a public health measure is the penalizing of infected individuals. For disciplinary purposes, as illustrated by the reduction of pay in armies and navies during the period of illness from venereal disease, or financial reasons, as in the barring of this class of patients from medical benefits in fraternal orders, or for other reasons, such measures may in their narrow application seem justified. But this whole group of procedures has little to show as concrete evidence of being effective against disease or even a deterrent of immoral practices.

IN CONCLUSION

It must be emphasized that the public should clearly understand that medicine and morals have a large common ground of interest in the prevention of syphilis and gonococcus infections. Every effort should be made to develop the same attitude toward these diseases that is manifested toward other dangerous communicable infections, that is, one of sympathy and assistance for the individual during illness and recovery, and searching inquiry into the source of the infection and the community conditions which may have contributed to the opportunity for infection. The social ostracism often exhibited without any endeavor to deal constructively with the problem avails nothing either for medicine or morals. It is possible to deal scientifically with venereal diseases and at the same time to advocate that every individual should know that sex relations outside of marriage not only expose him to diseases which may prove disastrous to himself and others but will unfit him for his highest efficiency in citizenship, marriage and parenthood, and that society has a right to expect each man and woman to set for younger people an example of self-respect and self-control in accordance with the standards of moral living which the experience and suffering of past generations have developed.

9. Social Hygiene, ii, No. 1, p. 140. The other figures quoted here are given for comparison of pedlers with certain other groups of the population:

	Number Examined	Positive—Number	Positive—Per Cent.
Tombs Prison (men awaiting trial)	446	49	10.9
Hart's Island Reformatory (boys)	544	37	6.8
Bedford Reformatory (women)	191	78	40.8
Penitentiary, Blackwell's Island (mixed)	253	62	24.5
Workhouse, Blackwell's Island (mixed)	3,046	1,468	48.2
Applicants for license to peddle	1,117	91	8.4

The Social Background of School Hygiene Work.—What is the value of and the motive force for all the health work, in school and out of it, that is now being undertaken? One can readily see that it has far reaching social, economic and moral phases. Evidently it is an attempt to make sanitation universal, to eliminate preventable disease, to perfect the social and individual health status. It means increased human efficiency, greater earning capacity, a normal social life and a better physical foundation for sound social and spiritual growth. It indicates that society is attempting to meet its social responsibility by protecting the whole of human kind from the menace of its defective members. It recognizes that one of the keenest socio-sanitary indices of a community's life is the care which it takes of its future citizens.—Donald B. Armstrong, M.D., *American Journal of Public Health*, December, 1915.

THE EFFECTS OF TETHELIN

ACCELERATION IN THE RECOVERY OF WEIGHT LOST DURING INANITION AND IN THE HEALING OF WOUNDS *

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I have recently succeeded in isolating the growth-controlling principle from the anterior lobe of the pituitary body. The methods of isolating the substance, its chemical properties and physiologic actions

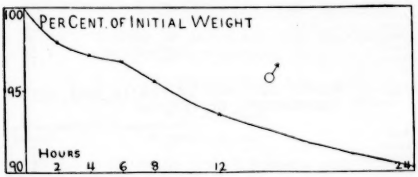

Chart 1.—Loss of weight of male mice during twenty-four hours' deprivation of food.

and the evidences of its identity with the growth-controlling principle are contained in articles which have been published elsewhere.[1] Briefly summarized, however, the method of isolating the substance, which I term "tethelin" (from τεθηλώς, growing), is as follows:

The dried tissue of the anterior lobes of ox pituitaries is extracted with boiling absolute alcohol, and the solution is evaporated under reduced pressure until solid material begins to separate out on cooling. To this solution are added one and one-half times its volume of dry ether. The substance is thus precipitated, and after washing in large volumes of alcohol-ether mixture containing alcohol and ether in the above-mentioned proportions, it may then be dried and pulverized.

Tethelin is soluble in water to the extent of about 5 per cent. It is also soluble in alcohol, ether, chloroform and carbon tetrachlorid. It is insoluble in a mixture of one part by volume of absolute alcohol and one and one-half parts by volume of dry ether. It contains 1.4 per cent. of phosphorus, and nitrogen in the proportion of four atoms of nitrogen for every atom of phosphorus, two of the atoms of nitrogen being present in amino groups and one in an NH group which is converted into an amino group by hydrolysis with barium hydroxid. It yields unsaturated fatty acid soaps of barium on hydrolysis with barium hydroxid, and among the products yielded by hydrolysis with barium hydroxid followed by hydrolysis with dilute sulphuric acid is found i-inosite.

Tethelin is very markedly hygroscopic, absorbing water rapidly from moist air. On standing after pulverization in contact with air in the presence of traces of moisture it darkens perceptibly in color, and its iodin absorption value decreases. This decomposition is accelerated by warming. If packed in evacuated glass tubes, however, and perfectly dry it may be heated to 80 C. (176 F.) without any perceptible discoloration.

Tethelin probably contains an iminazolyl group, and to this extent may be regarded as being related to the physiologically active substances of the *posterior* lobe of the pituitary body.[2] It is not, however, possessed of the characteristic physiologic activity of these substances, relatively large doses administered intravenously to rabbits (50 mg. per kilogram of body weight) producing only a very slight, transient *fall* in blood-pressure, and no diuresis.

The average yield from 300 ox pituitaries is found to be from 2.6 to 3 gm.; each anterior lobe, therefore, may be estimated to yield about 10 mg. of tethelin.

The action of tethelin in doses of 4 mg. per diem administered by mouth to mice between 4 and 60 weeks of age consists in a marked retardation of the early (preadolescent) growth in weight, and an equally marked *acceleration* of postadolescent growth. Mice which have received tethelin are much more firmly and compactly built than normal animals of the same age. Weight for weight, the tethelin-fed animals are smaller than normals, and size for size they are heavier. The favorable effect on the nutrition of the skin is exceedingly marked. The coats of adult male animals which have been fed with tethelin retain, even at 14 months of age, the glossy, silky appearance of the coats of young animals. Normal males even six months prior to this age have shaggy, "staring" and discolored coats.

Since tethelin, at all events subsequently to adolescence, would appear to be a strong stimulator of growth, it appeared probable that it might also accelerate that species of internal growth which consists in the replacement of tissue lost through excessive tissue waste consequent on any circumstance leading to an increase in nitrogen output (for example, fevers) or a curtailment of nitrogen input (for example, inanition). Accordingly the following investigations were undertaken:

Ten male and ten female mice, all about 7 months of age, were deprived of food, but allowed free access

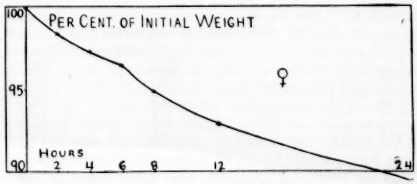

Chart 2.—Loss of weight of female mice during twenty-four hours' deprivation of food.

to water, for a period of twenty-four hours. They were weighed to the nearest tenth of a gram at the beginning of the period of fasting, and at 2, 4, 6, 8, 12 and 24 hours after the initiation of the period of fasting. The results, with the average weights expressed as percentages of the initial weights, are given in Table 1.

These results are plotted in Charts 1 and 2. It will be observed that there is a sharp break in the curves at 6 hours, accompanied by an acceleration of the rate

* From the Rudolph Spreckels Physiological Laboratory of the University of California.

1. Roberston, T. B.: Jour. Biol. Chem., 1916, xxiv, 397, 409.

2. Compare Barger, G., and Dale, H. H.: Jour. Physiol., 1910, xli, 499. Dale, H. H., and Laidlaw, P. P.: Jour. Physiol., 1911, xliii, 182. Aldrich, T. B.: Jour. Am. Chem. Soc., 1915, xxxvii, 203.

of loss of weight. This probably indicates that at the end of six hours' fasting the alimentary canal is completely emptied of its contents; the subsequent loss of weight must therefore largely if not wholly be due to actual loss of tissue substance. At the end of twenty-four hours the animals were visibly enfeebled, and the weight lost was from 10 to 11 per cent. of the original weight.

The animals were now divided into four batches of five males or females each. One batch of males and

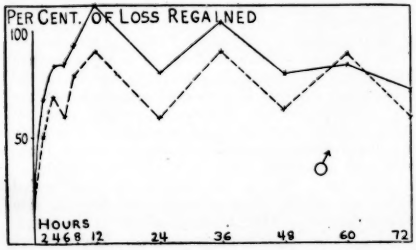

Chart 3.—Effect of 10 mg. of tethelin in accelerating the restoration of weight lost by male mice during twenty-four hours' deprivation of food: solid line, tethelin; broken line, normal.

one of females were "treated," that is, received a hypodermic injection of ⅓ c.c. of a 3 per cent. solution of tethelin (10 mg.) each. The other two batches were employed as "controls" and received no tethelin. The animals were all simultaneously given access to an abundant supply of a variety of foods (rolled barley, dried bread and mixed white and yolk of egg). They were again weighed after 2, 4, 6, 8, 12, 24, 36, 48, 60 and 72 hours, being abundantly supplied with food throughout the entire period. The results are given in Tables 2 and 3, the gains in weight being expressed as percentages of the loss regained.

The results are also depicted graphically in Figures 3 and 4. It will be seen that the administration of

TABLE 1.—LOSS OF WEIGHT DURING TWENTY-FOUR HOURS' DEPRIVATION OF FOOD

Time	Average Weight Per Cent. Males	Females
0 hours	100.0	100.0
2 hours	98.0	98.4
4 hours	97.2	97.4
6 hours	96.8	96.5
8 hours	95.6	94.9
12 hours	93.6	93.0
24 hours	90.3	89.4

tethelin leads to a very remarkable acceleration of the regain in weight following admission to food after inanition in both sexes. The actual weight of fluid administered hypodermically to the treated animals being only about 0.3 gm., or 0.1 per cent. of the weight of the animals, the mere weight of fluid administered could have no influence on the results, which must be attributed solely to the stimulation of tissue repair by tethelin. The stimulating effect evidently persists for at least thirty-six hours.

Another form of tissue repair consists in the *healing of wounds*. While experiments on animals and especially on mice do not afford the most satisfactory means of investigating this process, yet the following results are highly suggestive:

Twenty mice (fourteen males and six females) were wounded (under ether anesthesia) by removal with the aid of a punch (similar to a ticket-punch) of a disk of skin from 2 to 3 mm. in diameter from the sides or flanks of the animals. Ten of the animals (seven males and three females) received at the same time and every third day thereafter 10 mg. of tethelin dissolved in ⅓ c.c. of water and administered hypodermically on the side remote from the lesion. The remaining ten animals were used as "controls." All of the

TABLE 2.—WEIGHT REGAINED BY MALE MICE AFTER RESUMPTION OF FEEDING

Time	Percentage of Loss Regained Controls	Treated
2 hours	50	68
4 hours	70	84
6 hours	59	84
8 hours	79	96
12 hours	91	112
24 hours	59	80
36 hours	91	104
48 hours	63	80
60 hours	89	84
72 hours	59	72

TABLE 3.—WEIGHT REGAINED BY FEMALE MICE AFTER RESUMPTION OF FEEDING

Time	Percentage of Loss Regained Controls	Treated
2 hours	33	54
4 hours	33	54
6 hours	33	49
8 hours	50	70
12 hours	83	108
24 hours	54	83
36 hours	104	117
48 hours	67	78
60 hours	100	87
72 hours	79	75

animals were about 7 months of age. The following were the results obtained:

At the end of *three* days in the control animals the cavities of the wounds were incompletely filled with red or yellowish granulation tissue; the area of the lesions was not contracted, and the edges were in several instances inflamed. In the *treated* animals, all of the wounds were completely filled with granulation tissue, the area of the lesions had markedly contracted,

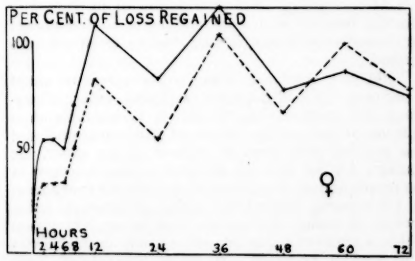

Chart 4.—Effect of 10 mg. of tethelin in accelerating the restoration of weight lost by female mice during twenty-four hours' deprivation of food: solid line, tethelin; broken line, normal.

and no swelling was observed at the edges of any of the wounds.

At the end of *six* days in the control animals the cavities of the wounds were now completely filled with granulation tissue, and the area of the lesions had begun to contract. In the *treated* animals, on the other hand, the granulation tissue had already and in every instance been completely replaced by white cicatricial tissue.

At the end of *ten* days the wounds in two of the *control* animals were still filled with granulation tis-

sue, the granulation tissue having been replaced by scar tissue in the remainder. The condition of the wounds in the treated animals remained unaltered.

SUMMARY

Experimental results indicate that tethelin, the growth-controlling principle isolated from the anterior lobe of the pituitary body, exerts, when administered hypodermically to mice, a remarkably stimulating action on tissue repair, as expressed in the replacement of tissue lost during a preceding period of inanition or in the healing of granulating wounds.

CHRONIC URETHRITIS IN WOMEN

A NEW METHOD OF DIAGNOSIS AND TREATMENT IN OBSCURE URETHRAL PAIN

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Chronic urethritis in women is much more common than is generally recognized. The symptoms are not always typical, and may not be referred directly to the urethra; but when a woman complains persistently and consistently of symptoms in the region of the pelvis, the urethra should not be overlooked as a possible source of the trouble, especially if no other pathologic condition can be found.

The pathologic findings in chronic urethritis are variable. The urethra may occasionally be thickened throughout from infiltration, and can then be felt as a more or less firm cord by the vagina. Through the endoscope the mucosa may have a congested appearance and may be puffy and edematous and appear granular. The vessels may be enlarged in places and even exposed, and definite ulcerations found. The congested, puffy, granular picture is the one most frequently seen. It may be diffuse, involving the entire urethra, or it may be patchy or limited to one or both ends. There is often bleeding after instrumentation. In some cases there may be a purulent secretion in the urethra, and this secretion may be seen exuding from the gland openings. This has been the exception, however, in the cases which I have encountered.

Many of the cases of chronic urethritis in women are mistaken for cystitis, the diagnosis being made on symptoms alone; and without further investigation than the examination of a voided specimen, in which some pus cells are nearly always present, irrigations of the bladder are instituted without relief of the symptoms. Irritation from repeated catheterizations may set up a urethritis, and will certainly aggravate an already existing inflammation in the urethra. There may be a chronic urethritis as a sequel to a cystitis, and there may be a chronic cystitis or trigonitis accompanying it. In such cases treatment is usually directed to the bladder alone, whereas the urethra is often accountable for a great deal of pain and discomfort. In all chronic conditions of the lower urinary tract in women, attention should be given to the urethra as a possible source of at least a part of the symptoms. In cases of chronic cystitis I have often found that, by treating the urethra at the outset, the pain could often be relieved before the bladder condition was improved at all.

The most constant symptoms are frequent and painful urination, usually burning, and there may even be vesical tenesmus. All degrees of these symptoms are seen. In the severer cases there may be a more or less constant pain of throbbing character in the region of the urethra or vagina. Some patients will have sharp, lancinating pains in the urethra. Reflex pains may be present, referred to the vagina, uterus, coccyx, rectum, etc.

In many of the cases the etiologic factor is obscure. When there has been a preexisting cystitis or acute urethritis, or when urinary infection is present at the time of examination, the causation is clear. But the condition may develop without any preceding local symptoms and with no urinary infection demonstrable. Several years ago Hunner pointed out the fact that ureteritis and urethritis were not uncommonly found in women as sequelae to chronic infections elsewhere, as infected tonsils, nose and ear infections, etc. I have seen chronic urethritis a number of times in women who suffered from an enterocolitis, and also apparently secondary to a pyorrhea alveolaris. Infection from without must also be considered. The female urethra may constantly harbor all sorts of organisms, owing largely to the close proximity of the anus and vagina. Such organisms are nonpathogenic under ordinary conditions, but they may become pathogenic under various stimuli. The *Staphylococcus albus, aureus* and *citreus*, the streptococcus, the *Micrococcus catarrhalis*, the *Bacillus lactis aerogenes*, the pneumococcus, the *Bacillus pyocyaneus* and many others have been cultivated from the urethra. Irritation and trauma from intercourse or masturbation, congestion from menstruation, etc., may be sufficient to activate these organisms. In hot weather when the patient is perspiring, and not drinking much water, the urine may become concentrated and cause irritation which may end in urethritis.

Treatment in these cases is best carried out by direct application of silver nitrate to the mucosa through a cystoscope or vesical speculum. I use a 5 per cent. solution as a rule, but sometimes use as strong as 10 per cent., and have used a 20 per cent. solution once or twice over limited areas. The treatments should be repeated from every three to five days. Dilating the urethra with sounds or dilators, in addition to the other treatment, is often beneficial, and gentle massage along the urethra, while the dilator is in place, may help. In milder cases, instillations of one of the colloidal silver preparations, such as cargentos or argyrol, may be sufficient to give relief. Instillations of iodin crystals, 0.3 gm. in 30 c.c. of liquid petrolatum, following dilatation and massage, may also be used. The best results, I think, are obtained from the applications of the straight silver nitrate solutions.

About eighteen months ago[1] I reported a series of thirty-two cases of chronic urethritis. Since then I have had twenty more cases. Of these fifty-two patients, sixteen had a simple urethritis without any accompanying trouble or history of a cystitis or acute purulent urethritis. One patient also had a ureteritis; twenty-nine had either a preexisting cystitis or some form of chronic urinary infection, such as cystitis, trigonitis or pyelitis, at the time I saw them; two had incontinence due to relaxed vesical sphincters.

Five of these patients were sent to me for diagnosis alone, and two others stopped treatment before any

1. Shallenberger, W. F.: Some Diseases of the Female Urethra, read before the Fulton County Medical Society, Atlanta, Ga.

results were obtained. Of the remaining forty-five, thirty-nine have been cured, three are still under treatment and are improved, and the other three have been greatly relieved of their symptoms.

It usually requires from four to eight applications of the silver nitrate to effect a cure, though some patients require many more than this. It is obvious that, when the etiologic factor is a tonsillitis or some similar condition, this should also receive its full share of attention.

CASE 1.—A patient referred to me by Dr. McRae had suffered from a chronic urinary infection for ten or twelve years. At the time that I saw her she had a colon bacillus cystitis and left pyelitis. There was no stone in the left kidney, and both kidneys were functionating well. She suffered intensely with pain and burning in the bladder and urethra, and increased frequency of urination. During the time that she had had the infection she had been treated by at least half a dozen different physicians. The bladder had been irrigated with all the different solutions, retention catheters had been tried, and all the urinary antiseptics had been used with no results, and during this time the urethra had never been touched. I at once directed my attention to the urethra, and after five or six treatments the pain was almost completely relieved. The pyelitis and cystitis are still present, for I have been unable to clear up the infection; but the pain can be controlled by treatments of the urethra. The patient is very large and fat, and objects strenuously to ureteral catheterization; therefore I was forced to abandon pelvic lavage, which I tried a few times in an effort to clear up the infection on the left side. She has been coming to me off and on for over two and a half years. If she stays away for any length of time the pain and burning comes back and she suffers as much as ever. But a few more treatments of the urethra soon relieve her. As long as the infection continues in the left pelvis and the bladder, she will have this urethritis. The important thing in this case is the fact that the seat of the pain seems to be entirely in the urethra, and the pain can be controlled by urethral treatments.

CASE 2.—Another patient had very severe attacks with the bladder, which necessitated the use of morphin to give relief. She had had the bladder irrigated for several months with no results. This patient was completely relieved by eight treatments with silver nitrate, and has remained well during the two and a half years since the last treatment.

The only patient whom I have treated and have been unable to relieve by the usual means as given above is the one with whom I worked out the new method that I wish to report. The method is that of nerve-blocking of the urethra.

CASE 3.—This patient was referred to me by Dr. McRae in October, 1913. She then had typical attacks of Dietl's crises with irritability of the bladder and pains in the urethra. There was no urinary infection and no stone. A collargol pyelograph showed a definite kink in the left ureter. I did a nephropexy, and the Dietl's crises were relieved, but not the bladder irritability and urethral pain. In spite of everything that I tried, this continued and the patient suffered intensely at times. Instillations of cocain and novocain solutions into the urethra always gave partial temporary relief; therefore I felt that it was the seat of the trouble. I finally tried blocking off the urethra by infiltrating the paraurethral tissue with a 1 per cent. novocain solution. This gave complete relief which lasted nearly twenty-four hours. I then injected alcohol, 60 per cent., after first infiltrating the tissue with novocain. The end-result was good and the patient remained comparatively easy for about two weeks, but the pain at the time of the injection was very severe in spite of the preliminary novocain infiltration. Therefore, I tried a solution of the novocain, 0.3 per cent., with quinin and urea hydrochlorid, 0.5 per cent., which gave excellent results. The patient has been more or less comfortable ever since (nearly three months). There have been slight pain and discomfort occasionally, but never any of the severe attacks like those which she had had before, and she will go for days without any symptoms whatever. I have also used this method in Case 1, and so far the relief has been complete. It has been only about a week, however, and so I cannot tell how permanent the result will be with her.

Aside from a means of giving relief in these intractable cases, this method affords a means of diagnosis in obscure cases of urethral pain, for, if we get cessation of pain by blocking off the urethra, we can be reasonably certain that it is the seat of the trouble. It could likewise be used to lessen the pain in cystoscopic examinations in patients in whom the urethra was sensitive and tender.

In conclusion I urge that the female urethra be given more attention as the possible seat of the trouble, especially in cases of obscure pelvic pain, and I wish to emphasize the importance of chronic urethritis as the cause of symptoms in many cases in which it has often been overlooked. I also wish to suggest nerve-blocking of the urethra in intractable cases, not only for the relief that may possibly be given, but also as a means of diagnosis.

THEORIES OF THE ETIOLOGY OF PERNICIOUS ANEMIA*

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The etiology of pernicious anemia belongs to that pleasant group of subjects which are always agreeable to discuss because our ignorance concerning them is so extensive that it is very easy to have a great deal to say about them. Indeed, when one considers the enormous amount that has been written relating to this disease and the comparatively small kernel of truth which it contains, a certain saying of Goethe's seems particularly appropriate:

> Denn eben wo Begriffe fehlen,
> Da stellt ein Wort zur rechten Zeit sich ein.[1]

During the past five years, for various reasons, among others the wider resort to splenectomy and transfusion as measures of treatment, interest in the disease has been greatly stimulated, and there is real difficulty in determining which topics to select for discussion. I must therefore at once disclaim any intention of attempting completeness in what I have to say, and purpose simply to present briefly some of the views which lately have been developed and which seem especially significant.

Even the most casual allusion to the subject, however, is hardly reasonable without a reference to the changes we are tending to adopt in our conception of the different types of anemias, owing to the somewhat clearer insight we are gaining into their nature, and a comprehension of this altered point of view is necessary in order to understand the relation which pernicious anemia is now believed to bear to the other forms. Even at this date the difficulties in attempting to establish a rational plan of classification are very great, because some of the fundamental facts needed are still lacking, and because we are not altogether certain as to what are the important and basic criteria

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* Read before the Section on Medicine, New York Academy of Medicine, Jan. 18, 1916.

1. "When ideas are lacking, words are easily used to replace them."

by which the different groups are to be separated, and what are merely unimportant and superficial differences.

A distinction between so-called primary and secondary anemias has long been current, the former being regarded as true diseases of the blood, and the latter as more or less symptomatic manifestations of other conditions having a well understood nature and etiology. It is clear, however, that this view must be abandoned, for, logically considered, there can be no such thing as a primary anemia, since the blood is not itself an organ, but is the direct product of the activity of the various hematopoietic organs or systems, and in a sense may more properly be regarded as a secretion than as an organ. The erythrocytes, having relinquished their nuclei, have no longer the right to be considered as true cells, and even the circulating white cells have only to the slightest degree, if at all, the power of reproduction. So the blood cannot be considered as being the seat of a primary disease any more than can the gastric juice, for example, and it must be conceded that all anemias are, strictly speaking, secondary.

To classify them arbitrarily as cryptogenetic or phanerogenetic accordingly as we are acquainted with, or ignorant of, their nature is equally unreasonable, and has not even the merit of expediency, for it leads to such extraordinary associations as placing two of the most antithetical diseases of all, pernicious anemia and chlorosis, in the same group — surely two of the most uncongenial nosological bedfellows imaginable.

The anemic state in the last analysis is the result of a disturbance of the normal equilibrium between blood destruction and blood production, and we find that in one group of anemias it is chiefly the former process which predominates, while in another it is a deficiency of the latter. Therefore a wholly reasonable attitude is to divide the anemias into two broad classes, one of which embraces those types in which the most conspicuous element is a reduction in the production of blood elements, while in the other group the significant feature is their abnormal destruction. To the former belong the anemias due to cachexia, wasting diseases, tumors and some of the toxic anemias, as well as the very special and distinct form of aplastic anemia, and the interesting type known as osteosclerotic anemia, to which attention has lately been called by Assman,[2] Reich[3] and others. In the other group come first the anemias due to loss of blood through hemorrhage, either acute or chronic, and the entire class of so-called hemolytic anemias, such as those caused by hemolytic poisons of definite nature, like pyrodin, phenylhydrazin, nitrobenzol, toluylendiamin, acetanilid, potassium chlorate, etc., and by those of a vaguer character, like the toxins of certain intestinal parasites, malarial organisms, or those sometimes produced in pregnancy, syphilis and carcinoma. Then there are the various types of hemolytic icterus, and finally the progressive pernicious or Biermer's anemia.

Chlorosis, being so essentially a disease *sui generis*, depending most probably on a constitutional anomaly of the internal secretion of the female sexual glands, and differing in such fundamental characteristics from the other forms of anemia, can hardly be linked with any of them, and would better be dignified by a separate pigeonhole all to itself.

Pernicious anemia accordingly finds its place with the hemolytic anemias, that is, those in which the most striking pathogenic feature is the fact that there is abnormally great cell destruction with a pathologically increased demand on the blood-forming tissues, rather than an inadequacy of these to meet the normal needs. Yet there is more at work than a mere hemolytic agency, for in hemolytic icterus, for example, there are also evidences of severe hemolysis, yet the anemia rarely takes on a very grave character. Evidently, in pernicious anemia the myeloid tissue also is deeply implicated by the hemolytic factor and finally becomes bankrupt under the double strain of supplying the abnormal demands on its hematopoietic function and in resisting the direct onslaught of the myelotoxic substance. It should be noted, however, that the state of utter marrow exhaustion existing in the so-called aplastic anemia is of totally different nature, and is not to be considered as the end stage of, or an unusually severe form of, pernicious anemia.

Aplastic anemia, which is characterized by great reduction in platelet formation and a strong tendency to bleeding, is to be classed with the hemorrhagic or purpuric diseases, for it is primarily a leukomyelotoxicosis, rather than a hemolytic anemia, and can be produced experimentally by benzene (benzol, C_6H_6) poisoning or with Roentgen rays.

We therefore conceive of pernicious anemia as being a chronic hemolytic anemia, the result of the action of certain hemolytic agencies, probably of varying natures, which are distinctive in that they evoke a special type of regenerative response on the part of the blood-producing organs which gives a perfectly definite clinical picture. Since both the blood changes produced and the alterations in the blood-forming tissues recall the conditions observed in the developing embryo, this so-called reversion to the embryonal type of hematopoiesis is regarded as a fundamental concept in the picture of the disease. These manifestations comprise in the circulating blood the well known factors of high color index, macrocytosis, the presence of megalocytes and megaloblasts, leukopenia and relative lymphocytosis. At the same time the bone marrow bears evidence to its overstimulation through the conversion of the normally fatty marrow of the long bones into actively functionating hematopoietic centers with erythroblasts, megaloblasts and megalocytes, as well as myeloblasts and myelocytes, though the actual output of leukocytes is always reduced. Further evidence of the active efforts at hematopoiesis is offered by the presence, as shown by the observations of Meyer and Heineke[4] and others, of extramedullary foci of erythropoietic and myeloid tissue in the spleen, the liver and possibly in the lymph glands. As a rule, however, the lymphoid system as such shows no manifestations of stimulation, and the production of lymphoid cells is never increased.

It is this simulation of conditions existing in the organs and in the blood-forming mechanism during intra-uterine life that constitutes the reversion to the embryonic type of hematopoiesis considered so characteristic of pernicious anemia. On the other hand, in osteosclerotic anemia, in which the bone marrow is gradually crowded out of existence by the encroaching bony new growth, there is also a development of myeloid foci in other tissues; but though the circu-

2. Assman: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1907, xli, 565.
3. Reich: München. med. Wchnschr., 1915, lxii, 944.
4. Meyer and Heineke: Tr. Deutsch. pathol. Gesellsch., 1905, ix, 226; Deutsch. Arch. f. klin. Med., 1907, lxxxviii, 435.

lating blood shows a high hemoglobin index and megaloblasts may be found, the presence of a leukocytosis and myelocytosis always distinguishes the picture from that of pernicious anemia, since the lesion of the bone marrow is not at all a toxic one.

In dealing with clinical cases it must be borne in mind that the blood picture is subject to great variations during the course of the disease, and that during remissions some of the characteristics, for example, the presence of megaloblasts, may be lacking, so that the other symptoms, such as increased urobilin excretion in stool and urine, yellowish tinge to the skin, fever, gastric symptoms, glossitis, spinal cord lesions, etc., must also be taken into account in making the diagnosis, while the blood picture alone may also, to a very considerable degree, be simulated in other types of hemolytic or chronic hemorrhagic anemia.

Granted that the disease is a primarily hemolytic one, the question as to the origin and nature of the hemolysins remains to be solved. In some cases the *materia peccans* is definitely known. For example, there is no doubt as to the rôle played in the bothriocephalus anemia by cholesteryl oleate, the cholesterol ester of oleic acid set free by the decomposing segments of this worm; and in the hemolytic anemia of pregnancy a definite hemolytic agent seems to have its origin in the placenta. Numerous authors have described hemolytic extracts obtained from the mucosa of the gastro-intestinal tract, spleen, etc., but this evidence is still incomplete, for active blood-dissolving agents can also be obtained from the organs of persons not having suffered from anemia, while the atrophic changes of the gastric and intestinal mucosa, formerly considered a typical portion of the picture, have been shown by Faber and Bloch[5] often to be absent or very slight if postmortem changes are avoided by the injection of liquor formaldehydi promptly after death. A curious fact has been pointed out by Hunter,[6] in support of the view that the disease is produced by toxins absorbed from the mouth or gastro-intestinal canal and acting through the portal circulation, for it appears that the liver in pernicious anemia may contain many times its normal amount of iron, resulting from red cell destruction, while the spleen shows no such increase, as would be expected if the hemolytic substances acted in the general circulation.

That the spleen plays an important rôle in pernicious anemia, and especially in hemolytic icterus, is also certain; but even the enormous amount of very fruitful work done in this field by Pearce[7] and his collaborators has as yet failed to clear up the situation definitely, and evidently some further extrasplenic factor or rather factors are involved. As Türk[8] puts it, "The hemolytic diseases are the children, and the spleen is their mother, but the father is still unknown, and possibly there are several fathers." Results of some significance have been obtained by Iwao,[9] who has been working on amino acids in Sasaki's Laboratory in Tokio. By injecting p-oxy-phenyl-ethyl-amin into guinea-pigs he was able to produce a blood picture closely resembling that of pernicious anemia. That of itself is not remarkable, since there are other substances that will produce a similar effect; but p-oxy-phenyl-ethyl-amin, or tyramin which has been isolated from putrefying meat, Swiss cheese and ergot can also be produced from tyrosin by the action of various bacteria, notably the colon bacillus, so that we have here the demonstration of the strongly hemolytic activity of a substance which can be, and no doubt is, produced in the human intestine. A recent theory, also implicating the gastro-intestinal tract, is that of Cederberg,[10] who believes that pernicious anemia is really a manifestation of anaphylaxis resulting through the absorption from the bowel of the body foreign protein, taking as a starting point the observation that animals dying of anaphylactic shock show a certain amount of hemolysis. In pernicious anemia a constitutional defect of the intestinal mucosa is presupposed which permits the incompletely broken down albumins to seep through into the blood stream and act as hemolytic agents.

Of interest is the work that has lately been done on the pernicious anemia of horses. This is a disease which is not infrequent in some parts of northeastern France and central Europe. The affected animals develop an anemia which has much in common with the pernicious anemia of human beings. There is an extreme anemia with a high hemoglobin index, intense polychromatophilia, leukopenia, relative lymphocytosis, disappearance of eosinophils, and reduction of platelets. The bone marrow is hyperplastic and shows evidence of abnormally active hematopoiesis and leukopoiesis. Foci of myeloid cells develop in the spleen and liver, and these organs, as well as the bone marrow, resemble those of embryos before the seventh month. An acute form of the disease is observed which terminates fatally in a week or two, with all the manifestations of an acute infection, while the chronic form may proceed for months or even up to a year. It has been considered that the disease is of an infectious nature, for it can be transmitted to horses and donkeys by the injection of serum from diseased animals, but not to animals of other varieties. The virus is resistant to drying, for the dried serum loses its infectiousness only after seven months, but it is rendered inactive by heating for one hour at 58 C. (136.4 F.).

Observations recently made by Seyderhelm,[11] if substantiated, may prove of some interest in connection with the etiology of human pernicious anemia. This worker made necropsies on eighty-one horses suffering from the disease, and found that in every case the stomach contained the larvae of several varieties of fly belonging to the *Oestridae*. It was possible to extract from the bodies of these a toxic agent of great activity, so strong indeed that in one case the injection subcutaneously of an extract of four of the larvae killed a horse in twelve minutes. The behavior of this toxic substance, which Seyderhelm calls oestrin, indicates that it is of purely chemical nature, for it withstands heating in the autoclave. Its administration to horses gives rise to an anemia in all respects resembling the spontaneously occurring disease, and the blood of these animals transmits the affection to others, though the newly formed poison differs from the old in being thermolabile. Oestrin, therefore, appears to be a substance which is able to produce in the body a chemical

5. Faber and Bloch: Ztschr. f. klin. Med., 1900, xl, 98; Arch. f. Verdauungskr., 1904, x, 1.
6. Hunter: Severest Anemias, London, 1909, p. 110.
7. Pearce and collaborators: Numerous papers in the Journal of Experimental Medicine, 1912, 1913, 1914 and 1915.
8. Türk: Deutsch. med. Wchnschr., 1914, xl, 371.
9. Iwao: Biochem. Ztschr., 1914, lix, 436.
10. Cederberg: Berl. klin. Wchnschr., 1914, li, 585.
11. Seyderhelm: The Pernicious Anemia of Horses, Inaug. diss., Strassburg, Gustav Fischer, Jena; Beitr. z. path. Anat. u. z. allg. Path., 1914, lviii, 285; Tr. Deutsch. pathol. Gesellsch., 1914, xvii, 456; Arch. f. exper. Path. u. Pharmakol., 1914, lxxvi, 149.

poison which is capable of reproducing itself when introduced into a fresh animal, and Seyderhelm suggests that such toxins, which he terms phyotoxins, may be responsible for the production of some of the other diseases thought to be caused by ultravisible viruses. In passing, it may be mentioned that Moffit[12] has injected the blood of pernicious anemia patients into horses, but without any effect.

The striking results obtained by splenectomy in pernicious anemia, Banti's disease and congenital and acquired hemolytic icterus have directed attention especially to the pathologic changes which the organ shows in this group of diseases. These appear to be of a nature to bring the red blood cells more closely into contact with the pulp cells of the spleen,[13] for this portion of the organ is found engorged, while the sinuses are relatively empty. There is a thickening and hyaline degeneration of the follicular arterioles, thus reducing their lumen and apparently side-tracking a considerable portion of the blood stream entering through the central artery, diverting it from the sinuses and causing it to flood the cell columns of the pulp. Here one finds foci of myeloid cells and evidences of phagocytosis, but it is probable that there is not so much actual blood destruction as a sort of sensitization of the red cells rendering them more susceptible to hemolytic action on the way to the liver, or perhaps by the Kupffer cells of this organ. The occurrence of remissions during which the blood picture suddenly becomes greatly altered for the better proves, however, that these purely organic changes cannot be the sole lesion and that there must be other agencies at work as well.

In this connection the studies of Eppinger[13] and of King[14] are important, for they found that in conditions associated with hemolysis, such as pernicious anemia and hemolytic icterus, there is an increase in the unsaturated fatty acids of the blood, which are known to have strongly hemolytic properties. Splenectomy, however, has the effect of reducing the amount of these, while the total fats and cholesterol of the blood which are antihemolytic are increased. These observations are highly suggestive, but not altogether in accord with the observations of McPhedran[15] on the relation of unsaturated fatty acids to hemolysis, and further work along these lines is highly desirable. None the less, the effects of splenectomy and transfusion, either separately or combined, are encouraging, and these two measures give the most hopeful outlook in treatment. From the seven splenectomies for pernicious anemia that have been performed at St. Luke's Hospital by Dr. Downes, we have gained the impression that the subsequent effects of transfusion were more marked and persisted longer than in cases in which the operation had not been done. Greater care seems necessary in the choice of donors for transfusion, and undoubtedly in time it will be found possible to devise more delicate tests than the relatively coarse ones for hemolysis and agglutination which we now apply. There are surely more subtle factors at work here, concerned perhaps with the colloids of the blood, as suggested by Doerr[16] and Moldovan[17] in connection with anaphylaxis and coagulation phenomena, and as discussed in greater detail in a paper published by Satterlee and Hooker from the laboratory of Clinical Pathology at the College of Physicians and Surgeons.[18]

Other studies which we have under way in this laboratory will, I hope, aid in determining some of these factors, especially in relation to the effect of transfusion on the ferment-antiferment balance in the blood plasma of the recipient. That some such considerations must be reckoned with is shown by the fact that sometimes a transfusion from one donor is followed by little or no benefit, while subsequent injections of blood from another individual may result in definite hematopoietic reactions, and it is always advisable, if a transfusion is not attended by good results, to select a different donor when the measure is repeated. The benefits of the procedure depend more, I think, on the stimulation that is given to the bone marrow than on the mere pouring into the vessels of a large volume of blood, and I am strongly of the opinion that small transfusions of from 100 to 200 c.c. frequently repeated are more likely to be a benefit than massive transfusions given as a last resort when the patient is moribund.

In gaging the effects of transfusion and of therapeutic measures in general, we have found in our cases that watching the fluctuation of the reticulated cells as brought out by supravital staining is of much interest and definite practical value in measuring the degree of bone marrow reaction. Another very useful guide to the intensity of the hemolytic process, and the effects of such measures as splenectomy or transfusion in checking it and also in determining the indications for splenectomy, is furnished by the study of the urobilin in the urine and particularly in the stools, or, as has lately been suggested by Schneider,[19] in the duodenal contents. The steps by which this substance is elaborated from hemoglobin through the intermediate stages of hemochromogen, bilirubin and urobilinogen, and the utilization of a portion of the urobilin for the resynthesis of hemoglobin through the intermediate formation of a new polymerization product of urobilin called urobilin complex, have been most carefully studied by Addis,[20] who has also described a useful quantitative method for determining the twenty-four hour excretion of urobilin and urobilinogen in urine and stools.

Finally, in addition to confessing that our efforts to cure the disease are still unavailing, we are obliged to admit that, unlike some of the other forms of anemia, notably chlorosis, which are diminishing, it is distinctly increasing in frequency. This has been noted not only in Europe, but also in this country. At St. Luke's Hospital during the seventeen years from Jan. 1, 1899, to Jan. 1, 1916, we have had 117 cases of pernicious anemia. Of this number, twenty-one patients were admitted within the first period of five years, thirty-two during the second period of five years, and forty during the third period of five years, while during the last two years there have been twenty-four cases, which is at the rate of sixty cases for the coming five year period. Or, expressed in percentages of the total number of medical admissions,

12. Moffit: Am. Jour. Med. Sc., 1914, cxlviii, 817.
13. Eppinger: Berl. klin. Wchnschr., 1913, L. 1509, 1572, 2409.
14. King, J. H.: Studies in the Pathology of the Spleen, Arch. Int. Med., August, 1914, p. 145.
15. McPhedran: Jour. Exper. Med., 1914, xviii, 527.
16. Doerr: Wien. klin. Wchnschr., 1912, xxv, 331.
17. Moldovan: Deutsch. med. Wchnschr., 1910, xxxvi, 2422.
18. Satterlee, H. S., and Hooker, R. S.: Transfusion of Blood with Special Reference to the Use of Anticoagulants, THE JOURNAL A. M. A., Feb. 26, 1916, p. 618.
19. Schneider, J. P.: The Splenic Pathology of Pernicious Anemia and Allied Conditions, Arch. Int. Med., January, 1916, p. 32.
20. Addis, Thomas: A Working Hypothesis of Hemoglobin Pigment Metabolism, Arch. Int. Med., March, 1915, p. 413. Addis, Thomas, and Wilbur, R. G.: Urobilin: Its Clinical Significance, Arch. Int. Med., February, 1914, p. 235.

during the first period of five years, 0.33 per cent. of the medical patients suffered from pernicious anemia, during the second period, 0.54 per cent., during the third period, 0.7 per cent., and during the last two years, 0.75 per cent., a rate of increase which certainly is noteworthy.

It is evident that while the etiology and pathogenesis of pernicious anemia are still most perplexing problems, we have gained some knowledge of the separate pieces which must be combined to form the completed puzzle. The disease is a syndrome based fundamentally on a condition of increased hemolysis plus a toxic action on the bone marrow, but the origin of these manifestations is most involved and depends on a variety of partial causes which are differently associated in different cases. One of these factors appears to be an abnormality of splenic function, conveniently termed hypersplenism, while another is the presence of some hemolytic agent. In occasional instances which we have learned to recognize, this agent is a toxin produced by the fish tapeworm, or by pregnancy, or by syphilis. In the majority of cases, however, it is still quite unknown, though it is probably of endogenous, rather than exogenous, nature, and there is much evidence in favor of the view that it is derived from the alimentary tract and belongs to the rather indeterminate group of ether-soluble substances termed lipoids. Possibly this lipoid substance serves only to render some other agent actively hemolytic — as cobra venom, for example, is activated by the lipoid lecithin with the formation of a hemolytic toxolecithid — or perhaps some action occurs such as has been shown in cases of experimental toluylendiamin anemia. Here the hemolysis is not caused directly by the chemical itself, but by a newly formed lipoid produced in the liver as the result of the poisoning, and it is interesting to note that if the spleen is first removed, much larger doses of the drug are required to produce the effect.[21] In addition there is probably a disturbance of the lipoid metabolism of the body in general, resulting in a decrease of the antihemolytic properties of the serum. This may reasonably be associated in our speculations with a disturbance of the functions of the ductless glands, notably the suprarenals, for studies on the cholesterol content of the suprarenal cortex and the blood have shown that an intimate relationship exists between the two,[22] while the antihemolytic properties of cholesterol have been well established. Still, though it has been found that in pernicious anemia the lipoids of the suprarenal cortex are diminished,[23] and also that cholesterol protects animals against experimental cobra venom anemia, attempts to use this agent in the treatment of pernicious anemia have been quite fruitless. Furthermore, one is led to believe that there must be some constitutional anomaly, some inherent weakness, either temporary or permanent, which renders the body susceptible and permits the other agencies to take effect. No one of these factors can by itself be termed the cause of the disease, for not the bothriocephalus, pregnancy, nor syphilis — oral sepsis, gastric achylia, nor hypersplenism, alone can produce it, and all such entities form only single links of the etiologic chain which binds the victim of pernicious anemia to his fate.

680 Madison Avenue.

21. Joannovics and Pick: Ztschr. f. exper. Path. u. Therap., 1910, vii, 185; Tr. Deutsch. path. Gesellsch., 1903, v, 150.
22. Landau: Tr. Deutsch. path. Gesellsch., 1914, xvii, 144.
23. Hueck: Tr. Deutsch. path. Gesellsch., 1912, xv, 251.

AFTER-RESULTS OF TONSILLECTOMY

A STUDY OF FIVE HUNDRED AND SEVENTY-ONE CASES *

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This paper is based on a study of five hundred and seventy-one boys of Girard College who have had their tonsils and adenoids removed some time during their residence in the institution, and is undertaken from the point of view of the general practitioner. The opportunity for such a study is greater here than in a general hospital, since the boys are under constant surveillance, and their medical histories are followed to the most minute detail. The regular habits of sleep, exercise and study, the wholesomeness of the food, and the hygienic care are all conducive to the development of a strong, healthy boy. Therefore it is assumed that results obtained here can be taken as an example of those expected in patients with good resistance.

It is my belief that a study, conducted by one who is not a specialist, of a fairly large number of cases, should be of value to both the profession and laity in forming their judgment as to the benefits to be derived from the removal of tonsils and adenoids.

The operations were performed by the late Dr. Joseph S. Gibb, and since Dr. Gibb's death in November, 1914, by the present laryngologist, Dr. Nathan P. Stauffer. A total enucleation of the tonsil and removal of the adenoid tissue was done in each case.

A complete nose and throat examination is made of each applicant for admission to the college, and those who, in the opinion of the laryngologist, are in need of tonsillectomy, are operated on, as a rule, during the first six months of their residence in the college. Again, all boys confined in the infirmary are referred to the nose and throat department should they show evidence of hypertrophy of the tonsil or adenoid.

During the course of this study each boy was examined, the records of the college and infirmary were freely consulted, and the boy requested to tell in his own words what he thought the operation had accomplished for him. The following order was pursued:

1. Date of operation.
2. Indication for operation.
3. Sore throats, before and after.
4. Presence of tonsillar tissue after operation.
5. Date of reoperation, and cause.
6. Mouth breathing, before and after.
7. General health after operation, in the words of patient.
8. Disease of ear, before and after.
9. Scholastic standing, before and after.
10. Enuresis, before and after.
11. Change in singing voice.
12. Miscellaneous.

1. *Date of Operation.*—The postoperative range covered a period of ten years, from 1905 to March, 1915. The average time since operation was three years, 175 patients having been operated on previous to 1910.

2. *Indication for Operation.*—Of the operations, 464 were performed either as a result of the examination for admission, or on being referred to the nose and throat department from the wards; 102 for tonsillitis; 11 for nasal catarrh; 17 for the correction of mouth breathing; 9 for improvement of ear condi-

* Read before the Section on Otology and Laryngology of the College of Physicians, Philadelphia, Feb. 16, 1916.

tions; 6 for speech defects; 5 for enuresis; 3 for difficulty in breathing; 1 for cervical adenitis, and 2 for the improvement of general health.

3. *Sore Throats.*—Three hundred and twenty had suffered from sore throats, ranging from one attack to six or more before operation, while 115 continued to have them. Therefore 205, or 64.06 per cent., were relieved by the operation.

4. *Presence of Tonsillar Tissue after Operation.*—A slight amount was noted in 183 cases, while in 72 cases enough was present to be considered as hypertrophy. The remaining 316, or 55.25 per cent., gave no evidence of tonsil present.

5. *Reoperation.*—Seventeen boys required reoperation. Of these, fifteen were reoperated as a result of sore throats, 1 for nasal catarrh, and 1 for the removal of a tonsil left in at the first operation.

6. *Mouth Breathing.*—Before the operation, 195 were mouth breathers, and 81 continued to breathe in that manner; 114, therefore, or 58.46 per cent., were relieved.

7. *General Health.*—Four hundred, or 70.05 per cent., felt the operation to have been of service to them along the following lines: the reduction of nasal catarrh; the improvement of hearing; improvement in speech; reduction of illness; physical development; improvement of digestion; improvement in school work, and the production of a state of well being.

8. *Diseases of the Ear.*—Forty-eight had suffered from discharges from the ears or defective hearing before operation, while afterward, 37, or 77.08 per cent., gradually cleared up. It is only fair to state that ear treatment was received during this period, yet I feel that the operation was an important aid in the recovery of these patients.

9. *Scholastic Standing.*—In conducting this study, forty-five were chosen. That a fair estimate of the average case should be made, they were taken alphabetically, three from a section, and boys who had been operated on long enough after their admission to form some idea as to their scholastic standing, but whose operation occurred a sufficiently long time before this study to give an opinion as to their postoperative records. The monthly averages of each boy in this group were taken up to the time of his operation, and from then to the time of the study. All marks are based on an average of 100 per cent., rather than a 10 per cent. basis, as is the custom in the college. As controls, forty-five who had *not* been operated on, living and working under the same conditions, three in a section, taken alphabetically, were studied in the same manner.

The general average of the forty-five boys who had been operated on from the time of their admission till the operation was 74.04. Of these, twenty-five, or 55.5 per cent., gave an average increase in monthly standing of 4.45 after operation, while the remaining twenty, or 44.5 per cent., suffered a decrease in average of 6.09.

The average of the forty-five boys not operated on was 74.21, and for the first group after operation, 74.06. It is interesting to note that the standing of slightly more than half of those operated on was improved, but when compared to those not operated on, no difference is seen.

A similar study was made on the smaller boys on whom operation had been performed on entering the college, but only those were selected who had a year's study after operation. Forty-five were again chosen, and their general average found to be 76.67. This was compared to the averages of forty-five boys in the same classes, not operated on, whose standing was 74.56. In other words, those operated on were 2.11 better than those on whom operation was not performed.

10. *Enuresis.*—One of the bugbears of the institution is bed wetting. We have used all manner of treatment with only average success, but it seems as though the removal of the source of irritation from the throat has been a help. Of the 571 patients, forty-six were bed wetters before operation. After the operation fifteen continued the practice, leaving thirty-one who ceased. Of these, six were circumcised at the time, and should be subtracted, leaving twenty-five, or 54.35 per cent., apparently helped if not cured. Naturally other methods of treatment were used at the same time, but the fact remains that they did not offend after the operation.

11. *Change in Singing Voice.*—At the request of Dr. Stauffer, Mr. Burton T. Scales, director of vocal music at Girard College, tested the voices of thirty-three boys immediately before operation, and again within from six to nine months. He reported an improvement in breathing, and resonance, and an average gain of two major tones in all but one, whose voice was changing during the examination.

AFTER-RESULTS OF TONSILLECTOMY

	Before	After	Improved Per cent.
Sore throats	320	115	64.06
Tonsillar tissue present	571	255	55.25
Mouth breathing	195	81	58.46
Disease of ears, impaired hearing	48	11	77.08
Enuresis	46	21	54.35
Scholarship, 45 studied	...	...	55.50
Voice, 33 tested	...	...	95.45
Health, opinion of patient	...	...	70.05

12. *Miscellaneous.*—Of thirty-four patients in a recent outbreak of scarlet fever, ten had the tonsils removed prior to the attack, about one third of those involved. This is the same relation that the total number operated on bears to the number of pupils in the college, there being 1,550 enrolled and 571 operated on. It is evident, then, that the absence of tonsils did not prevent the development of scarlet fever.

In the last twelve cases of diphtheria, three boys had their tonsils removed before operation, and of special interest in this connection is the history of a boy, having had his tonsils already removed, who was confined in the infirmary with an attack of mumps, where he was exposed to diphtheria. His throat gave positive cultures for forty-two days from that time, yet he gave no clinical evidence of the disease. In other words, he became a carrier in spite of the absence of tonsils. Again, no proof is here found as to any relation between immunity from diphtheria and the removal of the tonsils.

I wish to state that factors other than the removal of tonsils and adenoids were at work in these cases. The care of the teeth by the dental department, the careful selection of food, the control of milk and water supply, the open air life of the inmates, and the medical attention have added their quota to the results obtained, but these benefits are enjoyed by all alike; hence we feel that the results noted can, in a great measure, be attributed to the operation.

SUMMARY

1. Of 320 sufferers from sore throat, 205, or 64.06 per cent., were relieved.

2. Of 571 examined, 255, or 44.75 per cent., still had tonsillar tissue present.

3. Of 195 mouth breathers, 114, or 58.46 per cent., were relieved.

4. Of 571 questioned, 400, or 70.05 per cent., felt their health to have been improved.

5. Of 48 who had diseases of the ear or impairment of hearing, 37, or 77.08 per cent., were finally relieved.

6. Of 45 studied, 25, or 55.5 per cent., gave an increase in scholarship of 4.45 per cent., while 20, or 44.5 per cent., gave an average decrease of 6.09 per cent.

7. Of 46 subject to enuresis, 25, or 54.35 per cent., ceased to offend.

8. Of 33 tested, the voices of 32 were improved.

9. One third of the patients in a scarlet fever outbreak, and one fourth in a diphtheria series had been operated on before the attack. One boy already operated on became a diphtheria carrier.

15 East Airy Street.

HYDROPS TUBAE PROFLUENS

REPORT OF A CASE *

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AND
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By the term "hydrops tubae profluens" or "intermittent hydrosalpinx" we understand a condition of the fallopian tube in which the abdominal ostium is closed by inflammatory adhesions, while the uterine opening remains patulous. In consequence of this condition, the tube fills with serum as in ordinary hydrosalpinx; but when the pressure of this fluid inside of the tube rises to a sufficient degree, the fluid escapes through the uterine ostium and the tube becomes collapsed. Another explanation of this curious intermittent condition is that the uterine end of the tube is kinked, occluding the communication between the tube and the uterus; but as the tube distends with fluid, the kink becomes straightened, allowing the tubal lumen to become patulous again, following which, the tubal contents may escape into the uterus. The clinical appearance of such a case is one of intermittent pain in the region of the tube which is relieved by the appearance of a watery uterine discharge. The physical signs may be entirely negative, or a mass may be palpable in the region of the affected adnexa, depending on the condition of the tube at the time the examination is made, that is, whether the tube is distended or collapsed.

This condition, which is only a variety of ordinary hydrosalpinx and is not a clinical entity, is apparently not a very common one. The first description of a case of this type was recorded by Sachse;[1] but this description was based solely on the clinical syndrome, the actual pathologic condition not being demonstrated either by operation or by necropsy. The first demonstrated case of intermittent hydrosalpinx appears to be that reported by Scanzoni.[2] He states that in 1849 he assisted at a necropsy in which the left tube was the size of a goose egg, contained bloody fluid and communicated with the uterus through a tube $1\frac{3}{5}$ inches long by $\frac{3}{5}$ inch in diameter; however, he had never seen such a case in practice. Bland-Sutton[3] states that "there is no trustworthy pathologic evidence that these discharges escape into the uterus by way of the fallopian tubes." It is on account of such a statement that we take pleasure in presenting our specimen, which, we believe, thoroughly demonstrates the existence of an opening between the tube and the uterus.

Findley[4] reviewed the literature on the subject and reported a case of his own, bringing the number of reported cases up to fifty-nine. In some of these cases, however, operation was not performed, the diagnosis being made on the clinical symptoms alone, while a few of the other cases are of a doubtful nature. Regarding the rarity of this lesion, Findley quotes Martin,[5] who states that he could find only eight cases of hydrops tubae profluens in an examination of 1,700 cases of salpingitis. Since the report of Findley, the subject has been considered by Edelberg,[6] who reviewed eight cases of hydrops tubo-ovarialis profluens and added one of his own. A year later Norris' monograph[7] appeared with the statement that the records of the gynecologic department of the University of Pennsylvania show only three cases of intermittent hydrosalpinx in a series of 925 inflammatory tubes, of which 141 were cases of hydrosalpinx. Since this contribution from Norris, we have been able to find only one other recorded case, and that is one reported by Wanner.[8]

REPORT OF CASE

History.—F. H. (Case 122), a very stout woman, aged 33, came to the gynecologic dispensary of the University Hospital, Nov. 15, 1915. She had been married for fourteen years, and had had one child some years ago, and no miscarriages. Menstruation began at the age of 14. The periods were never regular, although the menstrual habit seemed to be of the four week type with a duration of three days. Every other month the flow was profuse, while in the intervening months it was scanty. Her last period was on Oct. 26, 1915. The previous history presented nothing of importance except that the patient had had her left tube removed four years previously. The patient complained of throbbing pains in the sacral and right ovarian regions associated with a vaginal discharge. Two weeks previously, while stepping from the sidewalk to the street, she felt a sharp stabbing pain in the right side and felt a sensation as though "something burst." Immediately after this a brownish discharge issued from the vagina and had been present ever since. During the past two weeks she had a swelling in the right side of the abdomen. The gastro-intestinal, cardiac and respiratory organs presented no symptoms.

Examination.—On admission of the patient to the dispensary, the uterus was slightly retroposed, and mobile but tender. There were induration and tenderness in the *left* ovarian region, but no mass palpable in the pelvis. The woman was of such huge proportions, however, that we did not have too much confidence in our failure to find a mass. A diagnosis of chronic pelvic inflammatory disease was made, and the patient ordered to take hot douches daily and report for observation. She returned to the dispensary every few days, and frequently reported that she had sudden attacks of severe right sided pain, followed by a brownish discharge from the vagina. Coincident with the appearance of the discharge, the pain disappeared; sometimes the discharge was

* From the Department of Gynecology, University of Pennsylvania.
* Presented before the Philadelphia Pathological Society, Feb. 10, 1916.

1. Sachse: Medicinische Beobachtungen, 1839, ii, 207.
2. Scanzoni: Lehrbuch der Krankheiten der weiblichen Sexualorgane, Ed. 4, ii, 75.
3. Bland-Sutton: Surgical Diseases of Ovaries and Fallopian Tubes, p. 358.
4. Findley: Am. Jour. Obst., 1906, liii, 234.
5. Martin: Krankheiten der Eileiter.
6. Edelberg: Gynäk. Rundschau, 1912, vi, 601.
7. Norris: Gonorrhoea in Women, Philadelphia, 1913, p. 360.
8. Wanner: Rev. méd. de la Suisse romande, 1914, xxxiv, 608.

so profuse that it necessitated her wearing a napkin. On several occasions she complained of dull dragging pain in the left side. On the basis of a history of intermittent pain relieved by the appearance of a vaginal discharge, a diagnosis of hydrops tubae profluens was made, and the patient was transferred to the gynecologic ward for operation.

Operation.—This was performed Jan. 5, 1916, by Dr. B. M. Anspach, and revealed that the left tube had already been removed, the left ovary was transformed into a follicular cyst about the size of a peach, the right tube was enlarged and contained fluid, while the right ovary seemed to be in good condition. The operation consisted of a supravaginal hysterectomy, right salpingectomy and left oophorocystectomy. On examination of the pathologic specimen after the operation was completed, it was found that when gentle pressure was made on the tube, there was a flow of clear, watery fluid from the tubal ostium at the uterine cornu, proving that the diagnosis was correct. The patient made a good and uneventful operative recovery.

It seems to us that in this case trauma may have played an active part in the precipitation of the symptoms, inasmuch as the patient dated the beginning of her trouble from the time when she stepped from the curb to the street, which, in a woman of her size, requires considerable muscular effort.

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INTERLOBAR EMPYEMA TREATED BY ARTIFICIAL PNEUMOTHORAX

REPORT OF A CASE

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The web of observation and experience has in the past few years gradually closed around the indications for the use of artificial pneumothorax in pulmonary diseases. Clinicians are well enough agreed as to the proper cases in which to use the method in pulmonary tuberculosis. The case which I report was one of acute interlobar empyema, which was draining through the bronchus, treated by artificial pneumothorax by nitrogen gas.

A boy, aged 5, American, whose family and past history could not be ascertained, was brought into the Faith Home suffering from stomatitis. May 11, 1915, he developed pneumonia which ran a nine days' course, with temperature as high as 107, and on the ninth day terminated by crisis. Following this the temperature was normal for about thirty-six hours and the youngster seemed to feel well. The next day he developed a little rise of temperature, the maximum reading being 100. The maximum temperature for the next three days was 101, and on the next day the temperature fell to 99 and then rose to 103 degrees. During this period the boy developed a constant cough with free expectoration of purulent material, and his breath was very foul. This rise of temperature continued for three days, fluctuating from 101 to 102. At this time I saw him in consultation with Drs. Segura, Thorning and Stokes. The symptoms were dyspnea and cough. On the right side, in the area at the fissure between the upper and middle lobes, the lung showed an area of dulness, over which the breast sounds were absent. Above and below this area were areas of tubular breathing, and no râles were heard in these areas. Below this area downward over the lower lobe the breath sounds were diminished, and tactile fremitus, although present, was diminished; a needle introduced into the right pleural cavity showed no free fluid or pus. Roentgenoscopy corroborated our diagnosis of interlobar empyema. At this time it was decided to perform an artificial pneumothorax, and the first injection was made. The temperature was 101.2. Into the right pleural cavity were injected 300 c.c. nitrogen gas, attaining a pressure of —4 cm. water. Following this injection the temperature rose (five hours later) to 103.6 at 2 p. m.; 102.2 at 5 p. m.; 102 at 9 p. m.; 100.4 at midnight, and 98.6 at 6 a. m.; the temperature after this time remained low. In the course of an hour the patient began to cough a great deal, and during the next twenty-four hours coughed up a great deal of pus. This expectoration gradually decreased. June 1, I injected 500 c.c. of nitrogen gas into the right pleural cavity. There was no reaction following this injection. The coughing now ceased and the boy improved rapidly. June 4, I injected 500 c.c. of nitrogen gas into the right pleural cavity, attaining an intrapleural pressure of —1 cm. water. There was no expectoration following this injection. The subsequent recovery was uneventful. Within a few days the boy was sitting up in a chair. He was discharged from the hospital June 9, 1915. There were no further symptoms, and four months later the boy was perfectly well.

From the clinical symptoms, physical findings and the corroborative report of the roentgenologist, Dr. B. T. Van Zant, we felt that our diagnosis as to the opening of the abscesses into the bronchus was correct. This point was of the greatest importance; had not the opening for drainage been present, the result might have been wholly different. A roentgenogram taken four months after the last injection showed that the lung had returned to its normal condition, and, incidentally, that the compression had not exerted any harmful effect on the structure of the lung. The physical examination at this time was negative.

A CASE OF MERCURIAL POISONING WITH RECOVERY*

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In the great majority of cases of mercurial poisoning, the period of life, after the ingestion of the poison, is relatively a brief one, and thorough studies are therefore impossible, owing to the severity of the condition, and early death. Our patient recovered, and permitted a thorough laboratory study of her condition.

CASE REPORT

History.—F. W., woman, aged 28, was admitted to the German Hospital, Nov. 28, 1915, in a semicomatose condition and very irrational, with the diagnosis of acute mercuric chlorid poisoning. According to the mother, five days previous to admission to the hospital, the patient had swallowed half a tumblerful of water in which two tablets of mercuric chlorid had been dissolved. On further inquiry it was learned that there was almost complete suppression of urine, at least twenty-four hours prior to admission.

The past history was unimportant except for the fact that the patient has always been delicate, and at times despondent. The latter condition became more marked after a herniotomy performed two years before, since which time the patient has been unable to work. She was retiring, and had never made many friends.

Physical Examination.—The only positive findings were erosions on the under surface of the tongue, varying in size from one-quarter to one-half inch, and epigastric tenderness.

Treatment and Course.—The following treatment, suggested by Lambert and Patterson,[1] was administered on admission:

* From the Laboratory of Pathological Chemistry and the Department of Medicine, service of Dr. Caille, German Hospital and Dispensary.

1. Lambert, S. W., and Patterson, H. S.: Poisoning by Mercuric Chlorid and Its Treatment, Arch. Int. Med., November, 1915, p. 865.

(1) colonic irrigation, gastric lavage and hot packs, twice daily; (2) continuous Murphy drips containing potassium acetate, 1 dram to 1 pint of water.

The patient was given by mouth 8 ounces of the following solution every hour, alternating with the same quantity of milk:

Potassium bitartrate	1 dram
Sucrose	1 dram
Lactose	½ ounce
Lemon juice	1 ounce
Boiled water	16 ounces

On the first day, November 28, the patient's condition was the same as on admission. On catheterization, 75 c.c. of urine were obtained which, on analysis, showed a very large amount of albumin, a specific gravity of 1.020, and many coarsely granular and hyaline casts. The patient vomited continuously, and was unable to retain even small amounts of fluid, and refused nourishment. The systolic blood pressure was 136, and diastolic blood pressure 100 mm. of mercury. The leukocyte count was 11,000, of which 74 per cent. were polymorphonuclears, and 26 per cent. lymphocytes.

From November 28 to December 2, the patient began to eliminate greater quantities of urine; her condition seemed better, except that she complained of burning pain along the entire gastro-intestinal tract. The restlessness subsided, and she appeared brighter, but continued to refuse food. Gavage and duodenal feeding were resorted to, but because of marked irritability of the esophagus and stomach, had to be discontinued. Hypodermoclyses were then attempted, but soon discontinued because of the excessive pain they gave the patient.

The urine elimination during this period rose from 200 to 700 c.c., and the urine showed albumin, pus and hyaline and granular casts in moderate amounts.

Stomach washings, colonic irrigations, urine and feces, were examined in the laboratory for mercury. The Vogel[2] test was employed, a positive reaction being indicated by formation of an amalgam of the mercury with gold, in a sealed tube. On the first day the urine and feces gave a positive mercury reaction, on the second day the lavage and feces were positive, and on the third day the urine, feces and gastric contents all responded to the test for mercury.

November 30, a chemical examination was made of the blood, which showed the following interesting figures:

	Mg. per 100 c.c. of Blood	
Nonprotein nitrogen	152	73 per cent. elimination
Urea	100	
Uric acid	7.65	
Creatinin	9.3	

The phenolsulphonephthalein test on this day showed an elimination of 22 per cent. for two hours. These figures for the nonprotein nitrogen and urea are somewhat lower than those reported by Foster,[3] and Myers and Fine.[4] No study of chlorid or nitrogen metabolism was attempted, since ingestion of food was made uncertain by vomiting.

From December 2 to December 7, the patient had severe gastric pains, with continued vomiting. The gastric analysis and string test and roentgenoscopy did not indicate the presence of an ulcer. The patient's general condition was improved, with a urine elimination of 700 c.c. in twenty-four hours, showing a decreased amount of albumin, and few casts. No mercury was found in the excretions, with the exception of the feces, which were positive for one day only (December 4). December 6, the blood was again examined, showing a decrease of nonprotein nitrogen to 32 mg. per hundred c.c. of blood, of which the urea nitrogen was 65 per cent., or 21 mg., and an increased phenolsulphonephthalein elimination to 34 per cent.

At the end of this period the vomiting subsided, the patient took more nourishment, and the feces contained no more mercury. The colon irrigations and lavage were then discontinued. The blood pressure was lower (systolic 118, diastolic 70 mm. of mercury).

From December 7 to December 11, the patient's mental condition varied considerably. At times she was very irrational, and at other times clear and alert.

December 11, there was a diminution of urine with the appearance of 1.5 per cent. sugar (probably due to excessive ingestion of carbohydrate). The blood analysis, however, showed no hyperglycemia, sugar concentration being 0.64 per cent. There were slight albuminuria, and occasional granular casts.

December 9, the chemical blood analysis revealed:

	Mm. per 100 c.c. of Blood	
Nonprotein nitrogen	30	53 per cent. elimination
Urea	16	
Uric acid	5.0	
Creatinin	2.5	

From December 11 to time of discharge, December 31, the patient's general condition steadily improved, with increasing urine elimination (900 c.c. daily, and only traces of albumin, and occasional granular and hyaline casts).

SUMMARY

During the first five days, the condition of the patient seemed somewhat improved, after treatment was instituted. Urine elimination varied from 200 to 700 c.c. daily. All the excretions and stomach washings gave positive tests for mercury; the blood showed a marked retention of nonprotein nitrogenous substances and low phenolsulphonephthalein elimination. The next five days of the disease showed a general improvement in the condition of the patient, and practically all excretions showed the absence of mercury; there was increased urine and phenolsulphonephthalein elimination. The nonprotein nitrogen and urea in the blood were markedly decreased. The only other cases reported, those of Foster, and Myers and Fine, showed a greater retention of nonprotein nitrogenous constituents in the blood than our case did. Their cases never showed a decrease of these substances during the progress of the disease, while in our case the nonprotein nitrogenous substances in the blood were markedly decreased as the patient recovered, which was almost coincident with the disappearance of the mercury. The remainder of her stay in the hospital until her discharge was marked by steady improvement in her general condition; she eliminated about the normal amount of urine, which showed only traces of albumin, with occasional hyaline casts.

2. Vogel, K. M., and Lee, O. I.: Detection of Mercury in the Excretions, THE JOURNAL A. M. A., Feb. 14, 1914, p. 532.
3. Foster, N. B.: Mercury Nephritis, Arch. Int. Med., April, 1915, p. 754.
4. Myers, V. C., and Fine, M. S.: Jour. Biol. Chem., 1915, xv, 391.

PURPURA HEMORRHAGICA TREATED WITH NORMAL HORSE SERUM

LAWRENCE SCHLENKER, M.D., ST. LOUIS

This case of purpura hemorrhagica, in a man aged 28, is instructive in the showing of a prompt response to treatment with normal horse serum.

History.—The patient had measles during childhood. In his eighteenth year he suffered from an illness diagnosed as nephritis, from which he recovered in three weeks. While never robust, he had had no other diseases, and assurance is positive that he was never subject to abnormal bleeding of any kind. There was no knowledge of hemorrhage in any member of his family. The present illness began the middle of December, 1915, with symptoms diagnosed as the grip. The temperature was from 103 to 104, and there were prostration, cough, and a mucopurulent expectoration. Under his physician's care he improved to some extent, when, January 9, he began to bring up large quantities of thin, bloody sputum. Two days later blood appeared in the urine, the latter soon

taking on the appearance of pure blood. The following day purpuric spots occurred in the skin, and nasal hemorrhages took place frequently. It is stated that there were no vomiting of blood, no blood in the stools, and no aural hemorrhages. Exsanguination was now taking place so rapidly that the patient's condition was becoming alarming.

Examination.—The patient was admitted to Mount St. Rose Hospital, January 11, in a state of shock. He was extremely pallid and exhausted, dyspneic and in a cold sweat. Pulse and heart sounds were very weak, regular, and 88 to the minute. A dozen or more small purple spots were visible in the skin of the forehead and arms; in the mucous membrane of the soft palate quite a large hemorrhage was present. Both nares were filled with dried blood; the gums and teeth were smeared with blood. The sclera of the left eye contained a fairly large hemorrhage. The urine, as voided, looked much like unmixed venous blood; after standing it separated into two equal layers, a thin, light red upper stratum, and a lower layer thicker and darker. The patient was coughing up more than a pint of bloody, serous fluid in the twenty-four hours, a fluid resembling laked blood somewhat. Examination of the lungs revealed edematous râles over the back and front of both sides of the chest; there were no signs of consolidation or cavitation. The temperature registered 99 in the morning, and from 103 to 104 through the afternoon and evening. The hemoglobin estimation was 60 per cent., while blood smears were negative, except for a marked paleness of the red cells. No tubercle bacilli were found in repeated sputum examinations, by ordinary smear or by the antiformin method.

Treatment and Result.—The patient was at once given 10 c.c. of normal horse serum, subcutaneously, which dose was repeated daily for the subsequent nine days, making 100 c.c. all told. With the exception of small doses of codein, given the first few days to quiet the nervous symptoms, no other medicine was administered. There was no evidence of serum anaphylaxis at any time. Improvement in sputum, urine and in the general condition was noticeable after the second injection of serum. Blood disappeared entirely from the urine after five injections had been given. The sputum became rapidly less in volume, as well as in blood content. The moist râles in the lungs gradually became less evident.

January 29 there was neither cough nor sputum. The urine was normal in appearance, and negative to tests for albumin and sugar. Temperature was normal throughout the twenty-four hours. The pulse was stronger but still somewhat weak. Examination of the lungs showed entire absence of moist râles.

Strength, weight and color had improved greatly; the patient was up and about the institution. Except for some remaining weakness, which was steadily disappearing, he felt perfectly well.

THE MANAGEMENT OF A CASE OF CUT THROAT

BEN D. BAIRD, M.D., GALESBURG, ILL.

I report this case because of its infrequent occurrence, many interesting features, and the various problems it presented which are of interest to the surgeon.

A man, aged 50 years, weighing 94 pounds, and suffering from chronic nephritis, attempted suicide, 3 p. m., Oct. 24, 1915, by cutting his throat with a paring knife ground down to a fine point. About two hours later he was found lying unconscious in a pool of blood with a gaping wound in his throat. Life was apparently almost extinct because of the loss of blood and his already weakened condition from the chronic nephritis, but an effort was made by the physician to unite the divided trachea temporarily, after which the patient was brought 20 miles to the hospital and was seen by one of my colleagues. Under ether anesthesia the wound was reopened and the divided trachea united and the skin incision closed without drainage. The wound did not involve either of the jugulars or carotids.

On the succeeding morning it was discovered that the patient was unable to swallow, and had been unable to swallow since the infliction of the wound. This was attributed to a loss of motor influences due to a division of the recurrent larnygeal nerve, and was allowed to continue for six days, at which time the patient was in a state of almost complete prostration, owing to the lack of nutrition.

On the sixth day rectal feeding was started. On the eighth day the patient came into my hands, and at that time the wound had broken open. There was a foul smelling discharge coming from it, and at every respiratory effort the air was forced out and sucked in through the wound at the side of the neck, showing that the sutures in the trachea had not held, and he was breathing through the tracheotomy wound instead of the nostrils. A long curved uterine probe was passed into the wound in the neck, and by following the posterior wall in an upward direction the probe appeared in the pharnyx, and I was able to prove that the pharynx had also been opened as well as the trachea divided.

A rubber catheter was then inserted into the wound and passed carefully downward into the stomach, through which the patient was given warm milk, water and brandy, the first nourishment of any kind which had entered his stomach for eight days. The condition of the patient and the condition of the wound were such that it was inadvisable to close the wound at this time. The problems then were how to build up the patient sufficiently to enable him to withstand the operation which was to follow, and at the same time prevent further irritation of the already diseased kidneys by an anesthetic.

The first problem was met by feeding the patient every eight hours with warm milk, water and brandy through the rubber catheter introduced into the stomach through the esophagotomy. This was continued for nine days.

November 10, under novocain (Crile's nerve blocking method) plus a 2 per cent. cocain solution injected into the tissues as the incision was carried down, gastrostomy was performed according to Witzel's method. The patient suffered practically no discomfort from the operation, and the question of nourishment was considerably simplified, as he was able to pour his own food into the funnel, and his gain in strength was rapid and remarkable. Thirteen days later, again under local anesthesia, a tracheotomy was performed below the wound in the trachea, through which the patient was to breathe during and following operation.

Seven days later, when the patient had recovered sufficiently from the immediate effects of his previous operations, he was again returned to the operating room, and with nitrous oxid and oxygen anesthesia given through a soft rubber catheter, which was attached to the tube of the Heidbrink gas machine and introduced into the trachea, I was enabled to enlarge the old self-inflicted wound and found that the action of the muscles acting from below (sternohyoid, omohyoid and thyrohyoid) and above (mylohyoid, geniohyoid and geniohyoglossus) the incision had retracted the divided ends of the trachea and the pharyngeal opening until there was a space 2½ inches between them. This had converted the transverse incision in the pharynx into a longitudinal one from about 2 to 2½ inches in length. Granulation tissue had formed around the cut edges of the esophagus, and it was with difficulty dissected out so that the freshened edges might be coapted behind the trachea. I carefully dissected the posterior pharyngeal wall completely loose from its attachments. The freshened edges of the pharynx were brought together by inverting the edges with a very fine plain catgut continuous suture. This line of sutures was then covered with a further row of fine chromatized catgut sutures.

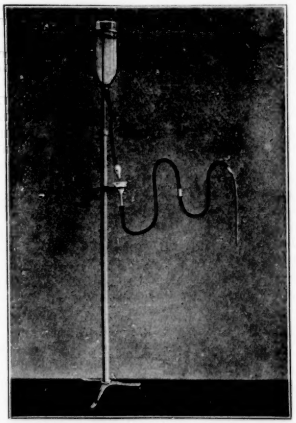
During this portion of the operation the divided end of the thyro-epiglottic ligament was plainly visible projecting downward from the base of the tongue. It was necessary to reconstruct or rather build up a new anterior pharyngeal wall, after which the divided ends of the trachea were freshened, care being taken to prevent blood entering the interior of the larynx where the vocal cords were plainly visible, and with strong No. 3 chromatized catgut interrupted sutures (these heavy sutures were necessary to overcome the action of the muscles), the divided ends of the trachea were brought together, care being taken to make a careful accurate approximation, as there was only the base of the tongue

above, to which the attachment could be made. After this, the overlying structures and the skin were united.

During the entire time required to do this operation, one and one-half hours, the patient was kept in the stage of analgesia, being easily aroused and talking, but lying perfectly still and feeling no pain. Immediately following the operation and at frequent intervals for several days, the patient was given nourishment through the gastrostomy tube. The element of shock was practically nil, but the subsequent edema almost completely closed the glottis for a period of three days, during which time the patient depended almost entirely on the tracheotomy tube to furnish him air.

After the fourth day he was able to breathe naturally, with only slight attention being paid to the tracheotomy tube. His voice gradually began to return, and sound nearly normal, and his general condition showed improvement. December 19, nineteen days after the repair of the pharynx and trachea, he swallowed food by the natural route for the first time without discomfort, since which time he has taken most of his food in this way. January 1, thirty-one days after his last operation, the feeding tube was removed from his stomach, and he has since taken his food naturally. His voice is about the same as it was before he received the wound. He has gained 10 pounds in weight, his urinary findings have improved, and he is now, two and a half months after his operation, really in a better physical condition than he was before he attempted suicide.

I have reported this case in order (1) to show the many steps which are at times necessary to be taken to conserve life, and (2) to point out the advisability (*a*) of the preliminary gastrostomy and tracheotomy so that air and food can be introduced into the system at a point below the site of operation, and (*b*) of the conservation of the already diseased kidneys by using nitrous oxid gas anesthesia instead of ether. The carrying of the patient through such a prolonged period in the analgesic stage is highly desirable for his own protection, should blood enter the trachea or any other respiratory interference occur, and the fact should be emphasized that these wounds close more readily a few days or weeks, if necessary, after the infliction of the injury than they do when immediate repair is attempted. This we were able to prove by experimental work on animals.



Apparatus for giving solutions by bowel.

The recurrent laryngeal nerve was carefully avoided with knife, scissors and hemostats. In the carrying of this case to a successful termination, I am indebted to Dr. C. W. Marks and Dr. A. D. Pollock for assistance.

Treatment of Pruritus.—Dr. Priestley Lipscomb, Denton, Texas, writes: I have noticed, from time to time, in Current Medical Literature in The Journal, abstracts on the cause and treatment of itching, or winter pruritus. I have been a sufferer myself for four years, and believe I have finally found a cure that is not only simple but also efficient. Heat, applied in the form of hot water, will give permanent relief. Wrap the legs in a good heavy turkish towel and pour hot water over it as hot as can be borne. Keep them heated for about thirty minutes, then unwrap them and apply a little cold cream to the skin. Repeat this procedure every day for thirty days. The first few treatments will relieve the itching, but the treatment should be continued longer if relief is to be of a permanent nature. I have prescribed this treatment for others and used it on myself, and have never been disappointed in the results obtained.

New Instruments and Suggestions

A SIMPLE METHOD OF GIVING SOLUTIONS BY BOWEL

Alanson Weeks, M.D., San Francisco
Chief Surgeon, Emergency Hospital Service

After numerous experiences in watching the routine use of the Murphy drip after operations in various hospitals, I have come to the conclusion that half of the distress complained of by patients is due to the retention in the bowel of gas or too much fluid. This is especially so in little children.

For many months I have used a method which consists of the usual container and dripper supplied by all hospitals, with a small glass funnel; a funnel holder, which will fit on the container stand; 5 feet of rubber tubing, with a glass tip, and an ordinary rubber catheter to suit the case. The funnel is to hang on a level with the patient's abdomen. The container is hung so that the dripper will drip into the funnel. The solution is allowed to drip only as fast as it is absorbed, and it is unnecessary to keep it warm.

The advantages of this outfit are: 1. The catheter can be placed in the rectum after operation, and it will be unnecessary to remove it at any time. 2. The funnel can be taken out of the hanger and hung over the bed in a basin for siphonage whenever needed. 3. It can be used to flush the bowel two or three times a day with tap water, clearing away any gas which may be retained on account of the plugging of the eyelet of the catheter.

This outfit will greatly lessen the work of the nurse and the discomfort of the patient, not only by being handled less, but also by allowing the gas at all times to bubble out of the funnel and by irrigating out the fecal matter as it appears in the rectum. I have found it of the greatest advantage over the ordinary methods in use in the case of operations on children.

If properly used, there will be no complaint of patients from the so-called "gas pains" after laparotomies.

Patients absorb a great deal more of the glucose solution with this outfit, principally, I believe, because of the lack of irritation to the rectum by too great a quantity of solution.

350 Post Street.

THE USE OF THE SAND TUBE IN ISOLATING THE BACILLUS TYPHOSUS

M. D. Levy, M.D., Galveston, Texas
Pathologist, John Sealy Hospital

In July, 1915, Gautier[1] reported thirty cases of typhoid fever which had been diagnosed by the aid of the sand tube method initiated by Carnot and Hallé.

During the past three months, I have been using this method in isolating the typhoid bacilli from duodenal contents, blood, spinal fluid and feces, and because of its satisfactory results and simplicity in technic, feel that it should be called to more general notice.

The technic employed is the same as given by Gautier except that neutral red was not used:

A pipet 33 cm. long and 5 or 6 mm. in diameter is bent in a U shape. One arm is filled to the height of 10 cm. with very

1. Gautier, P.: Rev. méd. de la Suisse romande, July, 1915; abstr., The Journal A. M. A., Sept. 4, 1915, p. 907.

fine sand (passed through a No. 40 sieve). The other arm is filled with hot bouillon (tinted with neutral red.) This works up to the same level in both arms. The arm without sand is then inoculated with a few drops of the infected solution and the tube incubated for eighteen hours. Only the most motile bacilli pass through the sand and develop in the layer of bouillon above the sand. The typhoid bacillus is usually the only one which penetrates the sand in eighteen hours, though occasionally the *Bacillus coli* also passes through. In all of our cases an agglutination test was done with a known positive serum, dilution 1:40.

In those cultures in which there seemed to be a contamination, subcultures were made on Endo's medium, Russell's medium, in litmus milk, and in dextrose bouillon, and in each case showing a positive agglutination test from our original sand tube culture, the growths were typical of the typhoid bacilli.

By use of this method we have been able to arrive at a fairly definite diagnosis from twenty-four to forty-eight hours earlier than by the other methods used.

A SUGGESTION FOR THE TREATMENT OF FRACTURES OF THE LOWER JAW

CHARLES G. LEVISON, M.D., SAN FRANCISCO
Fellow of the American College of Surgeons; Visiting Surgeon to the Mount Zion Hospital

That fracture of the lower jaw has been a nightmare to the surgeon is shown by the fact that many surgeons, as a matter of routine, refer this type of fracture to the dentist.

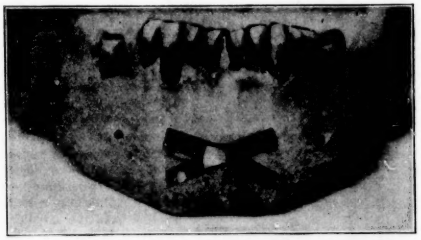


Fig. 1.—Plate applied to the chin.

The latter succeeds in obtaining fair results in complicated fractures, but these results can be achieved only after great trouble to the dentist and infinite annoyance to the patient.

Simple fractures of the lower jaw, more particularly in the median line, are comparatively easily treated but oblique fractures in any part of the mandible, especially at the angle, as well as bilateral fractures, are associated with great difficulty in maintaining approximation of the fragments so that the articulation is satisfactorily restored.

As far as my experience goes, pseudo-arthrosis of the jaw which has been wired or plated is rare, and it would appear from a review of the literature, as well as personal inquiry, that the inferior maxilla is not so prone to nonunion as a result of the employment of mechanical devices as are some of the other bones, so that the objection that is raised against the employment of plates, etc., would hardly obtain in this type of practice.

The following method for the treatment of fractures of the mandible has been found very satisfactory as far as ease of application and ultimate results are concerned, and the patient is subjected to the minimum of discomfort.

The illustrations are self-explanatory.

The plates used are made of German silver, $\frac{1}{8000}$ inch in thickness, and the metal can easily be cut with metal shears. The shape of the plate assures the maximum of fixation. If necessary the plate can be strengthened by soldering on its middle a small piece of the same kind of metal.

The drill to be used for making the holes is a No. 48 twist drill, and the screws can be obtained in any supply store.

The ease of application of the plates and the excellent approximation, as compared with the use of wire and other methods, can best be appreciated with their employment. One great advantage of the fixation of the jaw with plates

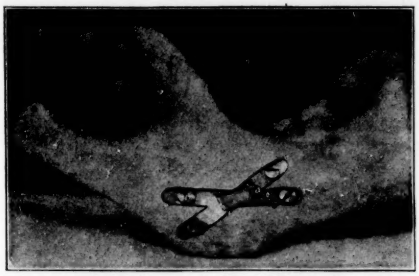


Fig. 2.—Plate applied to the angle of the jaw.

is that the patient can use his jaw with comparative ease immediately after the operation.

The plates are to be removed at the end of four or five weeks.

516 Sutter Street.

AN EYE-SHADE FOR USE WITH THE MICROSCOPE

ELLIS KELLERT, M.D., ALBANY, N. Y.

Probably no work on microscopy has ever been written without including several paragraphs, or even an entire chapter, on the care of the eyes. In earlier times when lenses and illumination were less perfect than at present, eye-shades

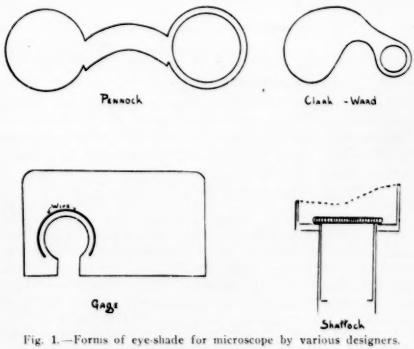


Fig. 1.—Forms of eye-shade for microscope by various designers.

of varying construction were in common use. These usually were intended to afford a blank surface to shield the unused eye, and consisted of a flat piece of board, fiber, or metal with a perforation at one side to admit the drawtube which supported the shade. Such shades have been designed by Gage, Ward, Pennock, Clark and others. Some of these are illustrated in Figure 1.

Laboratories are now constructed with large windows which permit an abundance of light to flood the microscopic

table. When one is working before such a window, the diffused light tends to render less distinct the image seen in the microscope, and very fine details may be entirely obliterated. Any device which will exclude the light entering the eye above the ocular is of distinct advantage. The image will become more sharp and, what is just as important, eye strain is diminished. A simple test will readily demonstrate the truth of this statement.

The shade herein described consists of a short piece of tubing of diameter large enough to fit over the upper end of

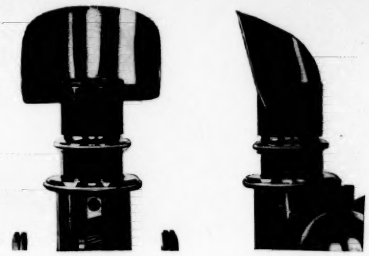


Fig. 2.—Author's eye-shade.

the draw tube. This tubing measures 2 cm. in height and is lined with felt or other soft material to prevent scratching of the lacquer. To the front of the tubing and slanting forward at a slight angle is a thin plate 8 cm. in width and 4 cm. in height. This is bent laterally so as to cup about the eye, and can be made to fit more snugly by cutting down a trifle the nasal side of the shade. It is made of aluminum with a dull black finish. The illustration (Fig. 2) affords a better idea of the construction of the shade than will a description.

I have used this eye-shade for about eighteen months, and find it of sufficient value to recommend it to microscopists. In the *British Medical Journal*, Oct. 2, 1915, Shattock describes a somewhat similar eye-shade which is also intended to prevent direct light from entering the eye above the ocular. I agree with him entirely as to the value of shading the eye in microscopic work.

A PRACTICAL CONTAINER FOR AIR SAMPLES*

James L. Whitney, M.D., San Francisco

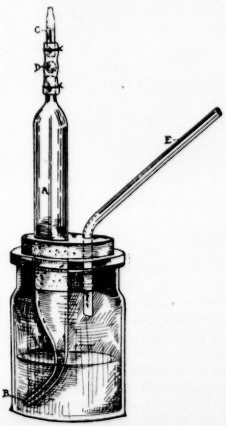
The ordinary method of collecting air samples is to employ two tonometer tubes with ground glass cocks, one of the tubes being filled with mercury. A fairly large tonometer will hold from 2 to 4 pounds of mercury, and the expense of an outfit for getting a number of samples, not to speak of its weight and bulk, is considerable. Another method is to make the collection in small bottles by the use of a mercury trough, which is also rather expensive, and involves some rather troublesome manipulations. Dr. Yandell Henderson suggested to me the use of acidulated water to replace the mercury in such a trough, and we found the results sufficiently accurate for our purposes. Since that time I have devised, and employed to a considerable extent, the small apparatus here described, as a very convenient means of collecting samples, and one which is well within the limits of accuracy demanded for most purposes.

As will be seen by reference to the illustration, the apparatus consists of a small wide-mouthed bottle of about 100 c.c. capacity, through the cork of which extends the air container (*A*). The latter can be easily made out of large glass tubing of at least 1.5 cm. inside diameter. It should be from 8 to 15 cm. in length in order to furnish the proper capacity (from 15 to 30 c.c.). It is drawn down at both ends and one end is curved as shown, so that the sample will not escape when the bottle is tilted for the transfer to the analysis apparatus. The upper end is connected by a short piece of rubber tubing with a glass tip (*C*) which should be made of small-bore tubing. As a valve a ground glass cock may be used, but quite satisfactory is a glass bead (*D*) inside the rubber tube. On pinching the rubber tube the air is allowed to pass the bead. A small bent tube (*E*) also passes through the cork of the bottle as a mouth piece. The bottle contains 1 per cent. sulphuric acid, which should be in such an amount that when the air container is full, the level of the fluid is at the small part of the container. This is in order to reduce absorption by making as small as possible the surface of fluid which is exposed to the sample. Weak acid is used instead of pure water because the absorption coefficient of 1 per cent. sulphuric acid is very low for ordinary gases. It need hardly be remarked that any dirt in the fluid should be avoided, as decomposing organic matter, etc., will materially affect the carbon dioxid content of the sample.

ANALYSIS OF SAMPLES IMMEDIATELY AND AFTER BEING IN RECEIVERS FIFTEEN MINUTES AND TWENTY-FOUR HOURS

	Samples					
	1		2		3	
	Carbon Dioxid	Oxygen	Carbon Dioxid	Oxygen	Carbon Dioxid	Oxygen
Original sample.....	6.16	12.31	3.30	16.10	3.92	15.83
After 15 minutes.....	6.08	12.16	3.31	16.90	3.93	16.00
After 24 hours.....	5.88	12.25	3.27	17.08	3.83	15.50

The method of use is as follows: After pinching the rubber tube around the bead, one blows through the tube (*E*) until the fluid rises to the tip. The bead is then released; this holds the fluid in place, and the apparatus is ready to collect a sample. Proper connection is now made to obtain the sample, and the valve is again opened. The weight of the fluid sinking in *A* will suck the sample in after it. On again releasing the bead the sample is safely held until a convenient time for analysis. When the sample is transferred to the analysis apparatus, the bottle should be held somewhat on its side, in order to allow the sample to be readily sucked out of the container, and avoid the considerable negative pressure which would occur if the bottle were upright. The apparatus is so small that the bead can be manipulated with the hand which holds the bottle, while the other hand is busy with the valves of the Haldane apparatus.



Container for air samples.

It has been found in practice that the error introduced by the use of weak acid in place of mercury is extremely small. The tabulated figures are given of the analysis of three samples to show the slight effect on the gas percentages.

It will be seen that there is a very slight loss in the carbon dioxid content, more marked when the percentage of the gas is high, but this is hardly larger than the error inherent in the portable Haldane apparatus, and is much smaller than the errors which are unavoidable in working with

* From the University of California Medical School.

patients. It is in connection with clinical work, rather than with research problems in the laboratory, that a handy receiver, such as this, will be found chiefly of value. Of course most analyses would be finished soon after sampling, so that errors larger than 0.2 per cent. would be uncommon. For very accurate work this receiver might be modified to employ mercury instead of weak acid. In this case the receiver should be shorter and of greater diameter, and the valve should be a glass stopcock instead of a bead.

University of California Hospital.

A COMBINED MOUTH GAG AND TONGUE DEPRESSOR

E. L. ROBERTS, A.M., M.D., NASHVILLE, TENN.
Chief Medical Examiner, Nashville Public Schools; Superintendent of the School Clinic

The combined mouth gag and tongue depressor, shown in the accompanying illustrations, needs little further description. The gag never pinches the lip. The screw shown in Figure 2 touches the chin rest—as shown in Figure 4—

Fig. 1.—Tongue depressor with narrowing part at near end, made in two sizes.

Fig. 2.—Holder for tongue depressor.

and thus holds down the tongue depressor, which fits in the groove shown in Figure 2. There is always room for the tongue between the tooth rest and the tongue depressor, so that it is not necessary to draw the tongue to one side. As the screw is turned, the blade presses on the tongue and the chin rest presses on the chin. The two counterpressures —upward and forward—hold the tongue depressor firmly in place. The chin rest swings free so as to be easily adjusted

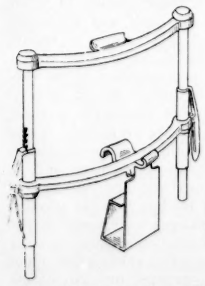


Fig. 3.—Mouth gag about half open, about half the actual size.

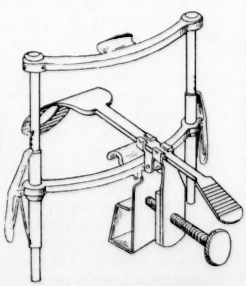


Fig. 4.—Combined mouth gag and tongue depressor about half the actual size.

to a receding or a protruding chin. The upper tooth rest should be covered with gauze or rubber tubing to protect the teeth and hold the mouth gag steady. This instrument secures a good exposure of both tonsils at once in nearly every case, and after it is once adjusted, it rarely ever has to be moved till the operation has been completed. After the tonsils are removed, two or three turns of the screw will release the holder so that it, with the tongue depressor, can be easily removed to make room for the adenoid instrument.

Therapeutics

THE EARLY RECOGNITION OF HEART DISEASE

Greater accuracy of diagnosis and better statistics will hardly account for the remarkable increase in recent years in the percentage of deaths from heart disorders. Certain factors have attained deserved prominence as potential causes of arteriocardiac disease. Among these, competitive athletics, modern business life, acute infections and especially syphilitic infection are to be noted. But while the etiologic factors are fairly well known, and their evil effects can be traced definitely, the fact remains that the first warning of serious cardiac disease is too often a sudden collapse of cardiac compensation and a varying degree of irremediable damage to the heart muscle.

The responsibility for this situation does not rest entirely with the physician, because every person over 40 owes it to himself to have a periodic medical overhauling, and advice as to prevention of these and other chronic affections. There remains, however, not a small share of responsibility for the physician, because too often when he *is* consulted, he falls into one of two errors: Either he does not make a thorough and complete examination, or else he does not appraise accurately certain definite but not prominent symptoms which are none the less guideposts to future trouble.

The recognition of the signs and symptoms of decompensation seldom fails. But how many times the hurried practitioner prescribes a tonic for the patient who comes complaining simply of tiredness and constant fatigue, even with a hasty examination failing to elicit organic changes and concomitant symptoms which would at once incriminate the heart! Not every man who is tired has heart disease, fortunately. But weariness, lassitude and decreased ambition do very often mark the first weakening of the circulation, and whether they are due to cardiac or other origin, it is the obligation of the physician to recognize them as abnormal conditions and seek further light in the examination and history.

These early signs of a weakening heart include a tendency toward breathlessness on ascending a flight of stairs, or running a few steps for a car, or walking up a hill. This is not dyspnea, and the patient may have it called to his attention only by the careful questions of the physician. Under similar conditions there may be only a sense of tightness in the chest or even of pain, which may wear gradually away or disappear at once on a few minutes' rest. Palpitation or acceleration of the heart's rate may not be noted. Sometimes the patient will admit that at night there is a little puffiness around his shoe tops, or that the feet seem somewhat swollen. There may be occasional spots and bright lights before the eyes, with a transient giddiness. Many of these symptoms pass unnoticed until recalled at the physician's questioning.

The routine examination of the heart at this stage may show some well marked valvular or other lesion, but there will often be found only such signs as a hasty examination is most apt to overlook. These may be merely a change in the quality of the first sound with a slight increase in cardiac dulness, or there may be associated an irregular pulse volume. Always in this field symptoms should receive equal or greater weight than physical signs.

Attention to these apparently trivial points will reveal many a case of cardiac disease at a stage when a modification in the regimen will of itself delay or prevent further progress. As has been said of pulmonary tuberculosis, it is not the too often impossible *early* diagnosis of cardiac disease which is to be emphasized, but the *earlier* diagnosis. Considered in the light of morbidity and mortality statistics, the earliest possible recognition of cardiac disease is just as important as the early diagnosis of tuberculosis. To detect it in this stage is usually to be able by proper diet, exercise and regulation of work to add years or decades of useful life to the measure of what would otherwise occur.

RECTAL FEEDING

Various conditions occur in which artificial feeding must be considered. The value of such feeding is still undecided, but sufficient metabolic experiments have been performed to warrant some conclusions. The most common artificial method for introducing nourishment into the system is by way of the rectum and colon. Mucous membranes have long been known to be good absorbing surfaces for certain classes of substances. They are supposed to afford an easy ingress into the lymphatics and hence into the general circulation. It is now also known that not all substances commonly used for nourishment, which help to supply sufficient calories to the system, are absorbed from the rectum and colon. There is, then, presented the problem of what substances are best absorbed, and in what ways these substances can be prepared and utilized so that they can be of service to the body. It is important to consider first those conditions in which artificial feeding is necessary. They may be grouped as follows:

1. Where there is an obstruction to the passage of food into the stomach. This obstruction may be produced by a stricture in any part of the esophagus, from new growths, from syphilitic or tuberculous ulcerations, or following the corrosive action of caustic substances which may have been swallowed.

2. Where absolute rest of the stomach is necessary, as in bleeding gastric ulcer.

3. In advanced carcinoma with pyloric obstruction, and in ulcer of the stomach or duodenum. Sometimes in the vomiting of pregnancy.

4. In severe emaciation due to improper digestion of food.

5. In coma or unconsciousness; also in paralytic conditions of the esophagus in which there is danger of introducing a stomach tube into the trachea.

Two methods for introducing substances by rectum are used: The first is the use of nutrient enemas given three or four times daily, and the second is the continuous drip method.

In the administration of nutrient enemas, cleanliness of the rectum and colon is essential. Feces or mucus on the mucous membranes prevents absorption. The rectum and colon should be washed out daily, preferably in the morning, with at least 2 quarts of warm water. If much mucus is present, 1 or 2 teaspoonfuls of sodium bicarbonate should be added to the warm water. It is not necessary to clean the rectum and colon just before each enema is introduced, as a proctitis or colitis may result. If any inflammation is present, boric acid added to the warm water will be found soothing.

The rectal tube should be slightly stiff with a diameter of from three-eighths to one-half inch. The tip of the tube is first lubricated with petrolatum, and it is then introduced to a distance of 6 or 8 inches. To the other end of the tube can be connected a longer rubber tube and a funnel. The amount of mixture to be introduced at one time should not exceed 8 ounces. The rectum can usually retain this amount, whereas a greater amount may be expelled. The mixture should be kept at body temperature, and should be introduced very slowly, the process occupying at least fifteen minutes. Too rapid an introduction tends to produce peristalsis, resulting in evacuation of the bowels.

At one time it was supposed that enemas could pass into the small intestines and there be subject to the action of the intestinal ferments. By careful Roentgen studies, however, it has been shown that the enema is not carried beyond the ileocecal valve, unless this valve is incompetent.

The kind of foodstuffs to be used should be based on a knowledge of the rate of absorption of each. The most easily absorbed substances are certain inorganic salts, dextrose, and the amino acids.

Examination of the urine at various intervals following the injection of sodium chlorid solution has shown that the chlorid content of the urine is increased. Dextrose is not only more readily absorbed than any of the other sugars, but it is also less irritant. It should rarely be given in stronger concentration than 10 per cent., since irritation may result.

Fats and oils should not be used in nutrient enemas, since neither of these is absorbed; on the other hand, their presence may hinder the absorption of other substances. Alcohol and coffee are readily absorbed, and can be used in an enema for nutrient and stimulating purposes.

Perhaps the greatest discussion in connection with rectal feeding has concerned the use of proteins. The undigested proteins are of no value at all, as they are not absorbed. In careful metabolic studies in which the daily output of urinary nitrogen was estimated, Bywaters and Short[1] showed that failure to receive any benefit from the protein material was due to either careless or incomplete peptonization of the proteins. When peptonization is carried on for twenty-four hours with a very active pancreatic extract, greater amounts of amino acids are produced. These are then absorbed, as shown by the increase of urinary nitrogen. These investigators use peptonized milk to which is added 5 per cent. dextrose and no eggs, as they found that there was a tendency to the production of hydrogen sulphid when eggs were used. Scheel and Begtrup[2] have come to similar conclusions in their metabolic studies. They assume that enough nutriment is absorbed from a properly prepared nutrient enema to save the body reserves. They use a 250 c.c. mixture containing not over 10 per cent. of dextrose, and consisting of amino acids prepared by long continued digestion of meat or milk by trypsin-erepsin. In this way they manage to supply from 400 to 600 calories daily. Their cases were all patients with gastric ulcer and hematemesis.

1. Bywaters and Short: Arch. f. exper. Path. u. Pharmakol., 1913, lxxi, 426.

2. Scheel and Begtrup: Ugesk. f. Læger, April 8, 1915, p. 543; abstr., THE JOURNAL A. M. A., May 22, 1915, p. 1804.

The drip method is increasing in favor as a means of supplying nourishment by rectum. Either a sugar solution can be used, or one containing peptonized milk and sugar. Barbee,[3] in postoperative treatment, used a 1.5 per cent. sugar solution. It was administered at the rate of from 30 to 40 drops a minute. In this way about 3 quarts of the solution could be absorbed in twenty-four hours. As the calorific value of this amount of solution is only 200 calories, it would not be life saving for any long continued period. However, he found that even after as long as seven days his patients did not lose much weight, and that no glucosuria occurred.

Adler[4] used from 4 to 8 ounces of peptonized milk, and 1 pint of 4 per cent. sugar solution. This was given by the drip method three times daily. In order to derive some information as to the actual amount of nitrogen absorbed, the caloric intake of from four to six days was compared with the output of nitrogen in the urine and the loss by return from the rectum. He found that in no case was there an absorption of more than 50 per cent. of the nitrogen supplied, and in some cases the absorption was as low as 30 per cent.

From a study of the experimental investigations in feeding both by enemas and by the drip method, it is evident that the number of calories absorbed falls far below the number actually required, and perhaps never exceeds 600 calories daily. As the actual requirement for a body at rest would be about 1,800 calories daily, it is evident that rectal feeding should be used only to tide over a temporary condition. Of course life will be prolonged when this method of feeding is utilized in hopeless obstructive carcinomatous and other growths of the esophagus, stomach or upper intestine.

In ulcer of the stomach with severe hematemesis, or in some acute stomach conditions when no food or drink by the stomach is advisable, rectal feeding may be life-saving. The water and small amount of nutriment absorbed will help to give comfort to a patient by relieving thirst and the pangs of hunger.

Various formulas for nutrient enemas have been recommended under various names. Most of them have contained eggs in some form, but it seems from the more recent investigations that it would be better not to use eggs as a nutrient in such feeding. Stone[5] recommends a more or less continuous enteroclysis by the drip method, using a solution of ordinary drinking water containing 30 gm. (1 ounce) of dextrose and 30 gm. (1 ounce) of sodium bicarbonate to the liter (quart) of water. Dextrose solutions can cause much discomfort and pain by producing flatulence. Consequently, only the weaker solutions of dextrose should be used. It must be decided which is the better method of giving the glucose solution in the individual case, whether every six hours for three times during the day, thus giving the patient a night's rest, or the use of the continuous drip method.

Gompertz of New Haven, who has carefully investigated the value and the comforts and discomforts of different nutrient solutions, and the methods of administration, prefers the "every six hour" method, using 500 c.c. (1 pint) at a time, and allowing it to pass into the colon at such a rate as will take at least two hours, or at most three hours for the patient to receive the entire amount. He thinks the dextrose (glucose) solution is less irritant given in this manner. His formula is:

	gm. or c.c.
Sodium chlorid	50
Dextrose (glucose)	50
Water	500

If this 10 per cent. glucose does not irritate the bowel and cause gas and distress, the solution may be increased to a 15 per cent. solution of glucose.

Whatever the rectal nutriment used, during such feeding the mouth should be carefully cleansed, as without eating and drinking the gums become infected. Infection easily occurs also in the different glands, especially the parotid.

3. Barbee: Northwest Med., September, 1914.
4. Adler: Amer. Jour. Med. Sc., October, 1915, p. 562.
5. Stone, W. J.: The Carbohydrate Factor in the Causation and Treatment of Hyperacidity and Ulcer, THE JOURNAL A. M. A., Jan. 29, 1916, p. 324.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

STYRACOL (see N. N. R., 1916, p. 87).—The following dosage form has been accepted:

Styracol Tablets, 5 grains.—Each tablet contains styracol, 5 grains. Prepared by Knoll & Co., Ludwigshafen a/Rh., Germany, and New York (Merck & Co., New York).

TANNALBIN (see N. N. R., 1916, p. 362).—The following dosage form has been accepted:

Tannalbin Tablets, 5 grains.—Each tablet contains tannalbin, 5 grains. Prepared by Knoll & Co., Ludwigshafen a/Rh., Germany, and New York (Merck & Co., New York).

STANOLIND LIQUID PARAFFIN.—A non-proprietary brand complying with the standards for liquid petrolatum, U. S. P., and made from American petroleum. For description see the Pharmacopeia or Useful Drugs.

Standard Oil Company of Indiana, Chicago.

It is colorless, nonfluorescent, practically odorless and tasteless. Specific gravity, 0.853 to 0.856 at 15 C. It complies with the tests of the U. S. Pharmacopeia (8th ed.).

Trachoma, a Menace to America.—The National Committee for the Prevention of Blindness has set forth in Publication 6 the history of investigations of trachoma in the United States and the facts and figures showing its prevalence, its effects on vision and the methods of control and eradication. It is said that sufficient publicity has been given to the term "trachoma" in the past twenty-five years to make it familiar, yet it is doubtful whether there is yet any general realization of its menace to the eyesight even in those communities in which it has secured a strong foothold. Among these communities eastern Kentucky has been for a number of years a focus for continuing and no doubt spreading the disease to other parts of the country, so that now, according to the investigations of the representatives of the Public Health Service and the State Board of Health of Kentucky, there are 33,000 cases of the disease in Kentucky alone. Foci of the disease exist also in other parts of the United States, some among the large industrial communities, but chiefly among the Indians on the various government reservations.

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SATURDAY, APRIL 1, 1916

THE PROBLEM OF SANITARY SWIMMING POOLS

Swimming is gaining an increasing popularity as a wholesome form of physical exercise and relaxation, and the swimming pool has become an adjunct to all sorts of establishments which promote physical welfare. With the swimming pool have come certain problems of hygiene which tax the ingenuity of those responsible for the sanitary control of the institutions. The possibility of transmitting infectious diseases through pools has already been referred to in THE JOURNAL.[1] Perhaps, as has lately been implied, the danger of infection in swimming pools has been overemphasized, although there are recorded reports of the presence of grip, colds, pneumonia, sore throats, etc., among those who have frequented the pools in certain educational institutions.

Although the problem of pool disinfection has received considerable attention, there seems still to be not a little discrepancy in the results and lack of agreement as to the ideal procedure for securing entirely satisfactory sanitary conditions. Levine,[2] of the Iowa State College at Ames, regarding the swimming tank as a "potential vehicle of infection," has reinvestigated various suggested methods and compared their efficiency. He clearly points out that the use of chlorin, as it is applied in the familiar routine with bleaching powder, has not solved the question of the sanitary control of swimming pools as it has that of water supplies for drinking purposes. A water supply after treatment is protected against repollution. A swimming pool is constantly receiving pollution and should therefore constantly be disinfected.

It has been pointed out by Roberts[3] that, in addition to continuous disinfection, an occasional complete sterilization of swimming pools would be advantageous. Copper sulphate, free chlorin and "bleach" have been recommended, the latter being most commonly employed. The hypochlorite process is doubtless excellent for its purpose; but the rapid decomposition of the bleaching powder, its irritant effect on the eyes, and other reputed objectionable features tend to eliminate this chemical for use in any continuous disinfection process. Levine has found that continuous filtration may effect a very considerable reduction in the bacterial count of swimming pools; but this is not enough to maintain them in sanitary condition. Filtration should therefore be supplemented with disinfection. Although calcium hypochlorite may advantageously be used at intervals, Levine returns to the recommendation of copper sulphate in this field. It is cheap, it has no irritating effect, and its disinfectant action is slower and consequently more applicable to continuous disinfection, than that of hypochlorite. If it is added just prior to the opening of the pool for use, the maximal efficiency of the copper salt will be exerted during the period of maximal pollution.

The acceptance of some dependable standard method of pool disinfection which could be readily applied by persons without technical training in the swimming tanks, which are becoming yearly more numerous and popular, would advance the cause of the public health. Doubtless the time will come when a sanitary standard will be recognized for plunges as it is for various other situations which concern the hygienic welfare of the individual. Meanwhile it may be helpful to report the latest contribution to the subject. According to the Iowa experiments,[2] filtration supplemented by disinfection with one part per million of copper sulphate three times a week and, if desired, an occasional sterilization with calcium hypochlorite, will keep a swimming tank in good sanitary condition for several months.

1. The Sanitation of Swimming Pools, editorial, THE JOURNAL A. M. A., April 24, 1915, p. 1427; The Practical Disinfection of Swimming Pools, Current Comment, July 10, 1915, p. 176.
2. Levine, Max: The Sanitary Control of Swimming Pools, Jour. Infect. Dis., 1916, xviii, 293.
3. Roberts: Eng. News, 1912, lxvii, 73.

FERMENTATION AND NUTRITION

Attention has been called recently[1] to the importance of the Bulgarian bacteria group in the preparation of ensilage, the fermented green food for cattle. As the result of several hundred bacteriologic analyses of many different kinds of ensilage at all stages of fermentation, it appears that the Bulgarian group of bacteria has a particular significance in the ripening of normal ensilage. The report is interesting as indicating that the value of the fermentation products of lactic acid bacteria was recognized for cattle and used many years before its significance for man came to be appreciated. It is also interesting to find that the Bulgarian group of bacteria should occur commonly in connection with the agricultural development of a past generation when little was known of the bacteriologic rôle played by this particular kind of cattle fodder.

The use of silos or pits for the preservation of food for cattle is very old, the word, indeed, being derived from a Greek root, and its modern application coming from the ancient usage. There is even some question

1. Hunter, O. W., and Bushnell, I. D.: The Importance of Bacterium Bulgaricus Group in Ensilage, Science, March 3, 1916.

whether the fermentation of green food for cattle is not very old also, though if so it has had ups and downs in popularity, and periods when it was entirely out of use. The modern use of ensilage is probably founded on a development of the ideas connected with the fermentation of cabbage and other green vegetables in the form of what is called sauerkraut for human beings. This has been employed in one way or another probably for many centuries. To people unaccustomed to it, such a food seems almost like a spoiled product, that is, a food material which has soured while in storage. Those accustomed to its use, however, find it a grateful food material with a tradition that it is of service in the digestion of other food products. Above all, it was believed that it prevented certain unfavorable fermentations in the intestines, and tended to stimulate peristalsis and thus greatly diminish the symptoms connected with constipation, or at least sluggishness of intestinal movements.

There were other products of fermentation in food materials which produced a similar unfavorable impression when first seen or tasted, and yet those accustomed to them had learned to like them as well as to appreciate their value as causing certain conditions within the intestinal tract which were favorable to its proper activity. Sour milk, which for a time was looked on by many as a more or less noisome product, sure to do harm except to those with rugged constitutions whom nothing could possibly disturb, never lost its popularity among the working people, in dairy districts particularly, and its congener buttermilk maintained an even wider popularity. Certain kinds of cheese, whose taste and odor as well as appearance often indicated strikingly the presence of a number of varieties of bacterial fermentation, became popular among certain peoples and in certain countries. Though deprecated at first by those who had their initial experience with them, their use has now spread until it is almost universal among those who can afford to pay good prices for the food they eat and who seek that variety which some think necessary to maintain gastro-intestinal activity properly in persons who live indoors to a great extent and do not take much exercise.

Some of the fermentations which have been noted in ensilage have as an end-product the conversion of starch and sugar, though most of them lead to lactic acid. Cattle seem to thrive on both products, and human experience with the various kinds of cheeses seems to indicate that many other fermentation end-products, some of them of protein character, may prove beneficial as well as savory. In a word, the whole question of the relations of the nutrition of human beings and cattle, and the fact that many natural changes in food materials seem to be conservative rather than destructive, are here illustrated. It seems not unlikely that the development of bacteriology, which was made originally because of its significance for humanity, but has proved of great service for cattle and plants, will now be furthered notably by contributions from the bacteriologic investigations of agriculturists and horticulturists. Thus many obscure points in the extremely difficult problems of nutrition may be cleared up.

PURE LECITHIN

Seventy years ago, Gobley[1] succeeded in obtaining from egg yolk and other organs a substance of fatlike nature, containing phosphorus and nitrogen, which he called lecithin. When it was discovered that this yields fatty acids, glycerophosphoric acid and the nitrogenous base cholin by hydrolysis, a basis was furnished for some conception of the structure of this interesting lipoid substance. It was therefore defined as an ester compound of glycerophosphoric acid replaced by two fatty acid radicals and cholin according to the formula commonly published in textbooks. When it was ascertained later that somewhat similar substances are present in different organs and tissues, Thudicum[2] suggested the group name "phosphatids," which has recently found widespread acceptance. Under this are included substances of diverse origin which have found their way into biochemical literature under the designations of lecithin, kephalin, cuorin and sphingomyelin. At first these "lipoids" were associated for the most part with the nervous tissues, in which they occur in considerable abundance. Little by little it was made clear that phosphatids are widely distributed in nature. They are probably present in all types of cellular material of either plant or animal origin. A careful study of the phosphatids of milk showing the presence of at least two distinct compounds of this group was recently reviewed,[3] and reference made to the difficulties attendant on this field of research.

Physiologic chemists have realized for some time that the "lecithin" of the textbook descriptions and the "lecithin" of commerce must in many if not all cases be represented by a mixture of substances, unless lecithin is to be conceived of as a far more complex substance than the current hypotheses indicate. As a rule the amount of cholin obtainable from a given "lecithin" has been too small to account for the whole of the nitrogen present. The published data range from 25 to 90 per cent.

It now appears[4] that the substance thus known as "lecithin" is probably represented by a mixture of two substances — kephalin, which tends to become insoluble in alcohol, and a substance which remains alcohol-soluble, true lecithin. Kephalin appears to have the

1. Gobley: Jour. Pharm. Chem., 1846, i, 5.
2. Thudicum, J. L. W.: The Chemical Constitution of the Brain, London, 1884.
3. The Lecithins of Milk, editorial, THE JOURNAL A. M. A., Nov. 13, 1915, p. 1734.
4. MacLean, H.: The Composition of "Lecithin," Together with Observations on the Distribution of Phosphatids in the Tissues and Methods for Their Extraction and Purification, Biochem. Jour., 1915, ix, 351.

same general structure as the latter, except that the base present is beta-amino-ethyl alcohol instead of cholin. Both are monaminomonophosphatids with a ratio of N : P = 1 : 1. MacLean,[4] of the Department of Chemical Pathology of St. Thomas' Hospital in London, has at length succeeded in isolating the "theoretical" compound described as lecithin, in which the whole of the nitrogen is accounted for by the cholin present. The nitrogenous impurities in the usual products are very complex chemically, and appear to include substances of a purin nature. Under these circumstances it is easy to see that all conclusions of specific physiologic effects due to commercial "lecithin" are based on no small degree of conjecture and possibility of erroneous assumption. Any one who has had practical experience with the analysis of lipoid mixtures, which seem to defy almost every conventional mode of purification, will recognize a great step in advance in this achievement. It is equivalent to saying that the postulated compound lecithin is a definite chemical entity. The way is now opened for the reinvestigation of the biologic properties of lecithin as an individual purified compound of recognized chemical structure.

RECENT STUDIES OF DIPHTHERIA CARRIERS

The part which healthy carriers of diphtheria bacilli play in the spread of diphtheria has furnished a subject for much study and discussion. Numerous investigators have found culturally and morphologically typical diphtheria bacilli in the throat and nose of from 1 to 4 per cent. of healthy persons. Zingher and Soletsky[1] refer to Wilcox and Taylor as finding 4.5 per cent. of carriers among the scarlet fever patients admitted to the Willard Parker Hospital, and in one half, the bacteria were virulent.

While diphtheria bacilli cultivated in cases of clinical diphtheria are practically always virulent, those grown from carriers are often nonvirulent. The general opinion of those who have studied the subject is that the avirulent diphtheria bacilli are harmless, that they never change into the virulent form, and that carriers of such organisms are not a source of danger. Many carriers of diphtheria bacilli rid themselves of the organisms in a short time, and it is only the persistent ones which are finally of most interest. Ruh, Miller and Perkins[2] define a carrier as a person who harbors virulent diphtheria bacilli for a period of twenty-one days or more. While this limit is arbitrary, it establishes a time beyond which it is reasonable to undertake to determine whether a person who has become a persistent carrier harbors virulent bacilli or only harmless avirulent ones in order that needless isolation and restrictions may be avoided. This can be accomplished in an inexpensive manner by employing the technic of Van Riemsdijk[3] or Zingher and Soletsky. In each case two guinea-pigs are used, one for the tests, and one, which has previously received diphtheria antitoxin, as a control. Both pigs are inoculated intracutaneously with the culture to be tested. Van Riemsdijk introduces some of the culture on Loeffler's serum by means of a sharp, flat-pointed needle, while Zingher and Soletsky inject a suspension of the bacteria with a syringe. In each case virulent diphtheria bacilli cause a reaction at the point of inoculation in the test pig which is absent in the control. Two guinea-pigs can be used for testing from four to six cultures. After it has been determined which individuals are carriers of virulent bacilli and consequently a source of danger to others, the practical question arises as to how to get rid of the bacteria. In trying to solve this problem a great number of antiseptic agents have been employed with the purpose of killing the bacteria. The latest addition to the list is iodized phenol, advocated by Ott and Roy.[4] Hektoen and Rappaport[5] advised the local use of kaolin to remove the bacilli mechanically from the nose and throat, and the recent report by Rappaport[6] appears to show that the disappearance of bacilli can be hastened in this manner.

No local measure has proved entirely satisfactory, a few cases always remaining in which the bacilli persist in spite of the treatment. A careful examination in such cases usually discloses some local condition which allows the bacteria to live and grow and which prevents their being reached by any application. The most common condition of this sort is one in which there are deep pockets in the tonsils which are more or less enlarged and visibly diseased. Cultures from the throats in such cases often fail to contain diphtheria bacilli unless care is taken to secure materials from the depth of the tonsillar crypts. Friedberg[7] has removed the tonsils in such cases with satisfactory results, the cultures becoming negative at once or very shortly. Similar favorable results from tonsillectomy have been reported by Ruh, Miller and Perkins.[2] In the eighteen cases reported by them, positive cultures had been obtained over a period of thirty-one days on an average, in one over 120 days. Following the tonsillectomy, negative cultures were secured after seven days on an average, in several as early as the third day. There seem to be no contraindications to the operation aside from those obtaining in other conditions. Carriers of diphtheria bacilli are always

1. Zingher and Soletsky: Jour. Infect. Dis., 1915, xvii, 454.
2. Ruh, H. O.; Miller, M. J., and Perkins, R. G.: Studies on Diphtheria, III, The Treatment of Diphtheria Carriers by Tonsillectomy, THE JOURNAL A. M. A., March 25, 1916, p. 941.
3. Van Riemsdijk: Folia Microbiologica, 1915, iv.
4. Ott, W. O., and Roy, K. A.: The Treatment of Diphtheria Carriers with Iodized Phenol, THE JOURNAL A. M. A., March 11, 1916, p. 800.
5. Hektoen, L., and Rappaport, B.: The Use of Kaolin to Remove Bacteria from the Throat and Nose, THE JOURNAL A. M. A., June 12, 1915, p. 1985.
6. Rappaport, B.: The Use of Kaolin to Remove Diphtheria Bacilli from the Nose and Throat, THE JOURNAL A. M. A., March 25, 1916, p. 943.
7. Friedberg, S. A.: Removal of Tonsils and Adenoids in Diphtheria Carriers, THE JOURNAL A. M. A., March 11, 1916, p. 810.

immune to diphtheria, and in any case the presence of immunity can readily be determined by means of the Schick test.

Local conditions in the nose and throat other than those in the tonsils may determine the persistence of bacilli, and should be sought in the individual case, and removed or relieved whenever possible. It seems likely that the employment of local measures of this sort will serve the very useful purpose of getting rid of a large number of persistent carriers which have heretofore been subject to various forms of local treatment without benefit.

SOME FEATURES OF THE DIGESTIBILITY OF FATS

Although it is generally admitted that the fats which ordinarily find their way into the dietary of man are well utilized when the amounts ingested are not unduly large and the individual is in normal health, our knowledge of the subject is still largely empiric, being based on every-day experience in dietetics. There is, however, a practical importance in learning the digestive peculiarities of the fats which are in common use, particularly since the changing habits of our population and the increased demand for culinary and table fats tend to bring into the market varieties which have been little used. The experts of the Office of Home Economics in Washington have expressed the situation by saying that a full understanding of the materials, of the nature of household methods of handling them, and of the resulting effects is necessary as a basis for real economy as well as for more rational and satisfactory use of foodstuffs. The right use of food materials must be governed also by a knowledge of their digestibility and their value as sources of energy available to the body. Neither can one overlook the modifications which are due to the combination of ingredients into foods and to the combination of foods to form meals.[1]

Fats vary in their physical texture as well as in their chemical make-up. An opinion is more or less prevalent that some relation exists between the hardness, as expressed by the melting point, and the thoroughness of digestion, particularly with reference to fats of high melting point. At present liquid fats of oily consistency are being "hydrogenated" on a commercial scale into products of firmer texture and higher melting point for human consumption. What is the ideal texture for digestion? Is it advisable to "blend" fats of different consistency to secure a more ideal product from a digestive or even a nutrient standpoint? Some of the naturally occurring fats differ so widely in their range of melting point, from the fluid oil of the olive and cottonseed to the firm mutton suet or isolated beef stearin, that abundant opportunity is offered for a direct investigation of the subject in man.

A systematic study of this sort has been begun by the U. S. Department of Agriculture.[1] An abundant allowance of butter, beef, mutton and pork fats, respectively, was incorporated in blanc mange and added to a very simple mixed basal diet composed of wheat biscuit, fruit, tea or coffee. In this way the utilization of the milk fat and the different kidney fats could be compared in the same subjects without too many complicating factors brought about by cooking and a diversity of culinary elements.

All of the fats included in this series of experiments were well assimilated, the coefficients of digestibility ranging from 97 per cent. for butter to 88 per cent. for mutton fat. The average amounts of fat eaten per subject per day during these experiments were 90 gm. of lard, 100 gm. of beef fat, 53 gm. of mutton fat and 100 gm. of butter. In order to learn whether or not the presence of any of these types of fat in relative abundance in the diet affects the digestibility of the other constituents and the "coefficient of availability" of the ration as a whole, appropriate additional data were secured. The average coefficients of availability of energy for the rations as calculated were 93, 92.7, 91.5 and 93.9 per cent. for the diets containing lard, beef fat, mutton fat and butter, respectively. These values agree with one another closely, and are somewhat higher than the value 91 per cent. which has been found to represent the coefficient of availability of energy of the ordinary mixed diet.[2] It is reasonable to conclude, therefore, that the different fats did not exercise any unusual effect on the digestibility of the other constituents of the rations.

The facts ascertained by Langworthy and Holmes[1] with respect to possible interrelations between the coefficients of digestibility of fats and their melting points are summarized as follows:

Fat Studied	Coefficient of Digestibility. Per Cent.	Melting Point. Degrees C.
Butter fat	97	32
Lard	97	35
Beef fat	93	45
Mutton fat	88	50

From this it seems fair to conclude, with the government experts, that of those tested, the fats of low melting points are capable of more complete assimilation than those which have a high melting point. In none of the ordinary fats, however, is the utilization notably deficient.

1. Langworthy, C. F., and Holmes, A. D.: Digestibility of Some Animal Fats, Bull. 310, U. S. Dept. Agric.

2. Bull. 136, Expt. Sta., U. S. Dept. Agric., 1903, p. 113.

An Age of Pestilence.—It is estimated that during the dark ages the average of human life was less than twenty years. The birth rate was high, but notwithstanding this, Europe was sparsely inhabited. Urban life, as we now know it, was quite impossible in this age of pestilence, and would soon become so again were the functions of preventive medicine relaxed.—John W. Fries, *Southern Medical Journal.*

Current Comment

HEALTH OF AMERICAN INDIANS FOR 1915

The report of the commissioner of Indian affairs for the fiscal year 1915 gives a gratifying account of general progress, and particularly of improvement in health conditions. The total number of Indians in the United States is 333,010, of whom 101,521 are classed under the five civilized tribes, including freedmen and intermarried whites. The birth rate per thousand population was 35.25, while the death rate stood at 30.50, showing a very definite tendency toward increase of population. The greatest single cause of death was tuberculosis, which caused 35.08 per cent. of all deaths. Tuberculosis is more prevalent than in the white race, and special efforts are being made against it. Sanatorium care of the tuberculous is found most effective, and four sanatoriums are now in operation, the Laguna having a capacity of thirty-four, the Sac and Fox of eighty-eight, and the Phoenix and Fort Lapwai, of 100 each. Arrangements have been made for the erection of additional sanatoriums at the Carson, Blackfeet, Turtle Mountain, Cheyenne and Arapahoe, Pima and Mescalero reservations. Better housing conditions are constantly urged, and special inducements are given the Indians to build pleasant, healthful homes. Traveling physicians give stereopticon lectures, and a campaign of education has been inaugurated in the schools to inculcate the principles of right living, preservation of health and the prevention of disease. Essay contests on tuberculosis and on alcohol have aroused great interest. Clean-up days, and special instruction in sanitation, infant mortality and first aid to the injured are other methods of arousing practical interest. Trachoma continues to be a serious problem, but in the boarding schools, where close control can be exercised over the children, it is found that the disease can be cured or prevented. Conditions are worse among the camp Indians. Here, too, educational propaganda is being pushed. The long course and the painful nature of treatment are noted as the chief causes for the slowness in eliminating trachoma. Attention has been called particularly to dental conditions requiring treatment, especially pyorrhea, which is very prevalent. The one hospital for the insane under the Indian bureau is located at Canton, S. D. It has a capacity of fifty-one, additional patients being sent to various state institutions. Particular emphasis is placed on the disastrous effects of alcoholic drinks on the Indians, and on the measurable improvement in temperance conditions during this year. In addition to a strict enforcement of the law against selling liquor to Indians, a special campaign has been inaugurated with conspicuous success along the lines of education of the Indians in the dangers of alcohol. The field medical service of the Indian bureau consists of 1 medical supervisor, 1 special supervisor, 7 special physicians, 7 field dentists, 6 field nurses, 121 regular and 61 contract physicians, 81 nurses and 78 field matrons. In a total of 205,450 Indians coming under the reservation reports, there were 6,542 births, as against 5,632 deaths; of the deaths, 1,897, or 33 per cent., were in children under 3 years of age; 66,729 Indians were examined for the presence of disease, of whom 7,195 suffered from tuberculosis and 14,433 from trachoma; the total number of cases of tuberculosis is estimated at 22,834, and of trachoma at 34,947; 45,005 families lived in permanent houses, and 9,213 families in tepees, tents, etc. It is gratifying to note a steady advance in sanitation, housing, education and general health conditions. These must play no small part in the definite increase in the Indian population.

FATIGUE AND GASTRO-INTESTINAL MOTILITY

The movements of the alimentary tract are regulated not only by local nerve centers in the walls of the canal itself, but also through impulses which arrive from the central nervous system. In this way many influences which may even in part be conflicting in their effect can play on the gastro-intestinal tract at the same time. With the possibility of disturbing influences coming to portions of the intestine either reflexly through the central nervous mechanism or from other parts of the digestive apparatus, it is not surprising that discrepancies have arisen in regard to the interpretation of the motor phenomena. Observations of the gastro-intestinal motility by means of Roentgen examinations, which leave the organism intact and are applicable even to man, have a decided advantage, therefore, whenever it is desired to consider the general effect of any condition on this function. This lends a special value to Kast's recent study of the effect of fatigue on gastro-intestinal movement.[1] Fifty-four individuals were kept on a standard diet for a number of days, and the motor efficiency of the stomach and intestines was determined repeatedly by a combination of the Roentgen method, the use of the stomach tube, and the administration of carmin to determine the period of transit of food residues through the bowel. By taking the average, it was determined how long it took the stomach, and separately, how long it took the intestines, to propel the given amount of food. During the period of tests, the amount of physical activity was markedly increased or decreased, and the effect on the evacuating power of the stomach or intestines observed. At other times, without change in the diet or the amount of physical exercise, the amount of mental efforts was markedly increased or decreased, and the effect observed in the same manner. Summarizing the results of such experiments, it appears that the healthy individual showed very little variation as regards the evacuating power of the stomach or intestines as long as the physical exercise was not excessive. Mental efforts had no perceptible effect. In patients with moderate and marked degrees of atony and splanchnoptosis, the evacuating power of the stomach and intestines decreased in direct proportion to the amount of mental and physical exertion. Physical exertion had the same effect in such individuals if the patient was kept in a horizontal position during these exercises and during the period of observation in order to eliminate

1. Kast, L.: Effect of Fatigue upon Gastro-Intestinal Motility, Proc. Soc. Exper. Biol. and Med., 1916, xiii, 79.

the effect of splanchnoptosis in the erect position. In patients who clinically appeared susceptible to the effects of fatigue, mental exertion was more marked in its delaying effect than physical exertion.

THE PHYSICIAN IN INDUSTRY

Medical supervision of employees is no longer a novelty; that regular inspection of workmen increases efficiency, prolongs lives and lengthens the period of industrial usefulness has become generally recognized. Many of our larger industries, employing thousands of men, have equipped establishments for routine examination of employees and for the treatment of injured workmen which equal in scope and equipment some of the best hospitals. Employers have found that the careful selection of men for individual positions to which they are physically fitted means a saving in the loss of time through illness and increased output of work during regular working hours. In a recent address, Alexander[1] notes the various ways in which the physician may be of service to large industrial institutions. Aside from looking after the health of individual employees, he may search out the various conditions which affect adversely the health and comfort of all the workmen. He may aid in securing proper ventilation and lighting. Through lectures and individual instruction, the workmen may be informed concerning healthful habits to be employed at home and in the shop. A limited number of intelligent employees may be instructed in first-aid measures, enabling them, in time of emergencies, to be of service to other workmen. The work of the industrial physician is unique. He is confronted with situations which perhaps arise in no other field of medicine. His material consists usually of workmen, many of them recent immigrants, not acquainted with the English language, subject to the diseases of the country from which they came, and ignorant of the ordinary elements of hygiene which are familiar to the graduates of the modern American public school. Efforts are being made to standardize the work in the various industrial establishments — to bring about uniform standards of ventilation, light, sanitary requirements, etc. In the great field of prophylaxis in which physicians have pointed the way, such work is practical and economical.

1. Alexander, Magnus W. (executive secretary, Conference Board of Physicians in Industrial Practice): The Physician in Industry.

A Moral Obligation.—Physicians have the moral obligation to instruct the public in matters of health. Preaching before practice is of little avail. It behooves the medical profession to make at least a reasonable effort to clean its own house before it passes the broom to the public. Realizing this responsibility, the American Medical Association some years ago established its Council on Pharmacy and Chemistry. This Council is strictly an educational agency—it collects and disseminates knowledge about drugs, especially those drugs that are advertised to physicians and that are not described in the legal pharmacopeias. Physicians are thus put in a position to discriminate. Many have done so; others will; a few may never see the light on this earth.—Editorial in *Cleveland Medical Journal.*

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Bacteriologist Resigns.—Dr. Philip B. Moss, Montgomery, state bacteriologist and pathologist for six years, has resigned to take effect, May 1, and will move to Selma.

Hospital News.—Drs. Luther L. and Robert S. Hill have presented to the city of Montgomery the Laura Hill Sanatorium, a building of forty-five rooms valued at $26,500. The city will operate the institution as a charity hospital.

State Association Meeting.—The annual meeting of the Medical Association of the State of Alabama will be held in Mobile, April 18 to 21, under the presidency of Dr. James N. Baker, Montgomery. The Jerome Cochran lecture will be delivered by Dr. Howard A. Kelly, Baltimore, on "Radium Therapy in the Treatment of Disease." Symposiums are planned on arthritides, syphilis, diseases of the digestive tract; pellagra, tuberculosis, diseases of children, and complications of pregnancy.

CALIFORNIA

Clinic Building.—Plans have been completed for a concrete clinic building to be erected in Los Angeles under the direction of the Parent-Teachers' Association as a free clinic for schoolchildren. The building will be 40 by 140, two stories in height and will cost $25,000.

Personal.—The Fresno County Medical Society has appointed Drs. Kenneth J. Staniford and Clifford D. Sweet to conduct the work of the tuberculosis clinic in Fresno during the year.——Dr. Louis H. Freedman has been appointed chief deputy health commissioner of the International White Cross Society, with office in Los Angeles.

State Society Meeting.—The annual meeting of the Medical Association of the State of California will be held in Fresno, April 18 to 20. The Fresno County Medical Society has made elaborate arrangements for the entertainment of their guests, including automobile trips, visits to the large wineries of the county, the Sunnyside Country Club, the Kearney Farm and one of the plants of the California Associated Raisin Company.

COLORADO

Personal.—Dr. Ralph W. Mendelson, Pueblo, who has been with the army in Serbia since the opening of the war, has returned home.——Dr. James A. Matlack, Longmont, has been appointed assistant at the Mayo Clinic, Rochester, Minn.

The Manitou Waters.—The El Paso County Medical Society, at its March meeting, appointed a committee of ten, which will be known as the Manitou Mineral Waters Commission of the El Paso County Medical Society, and this committee has already secured the services of a physiologic chemist who will be engaged for a long enough period thoroughly to test the effects of the waters. He will be provided with a fully equipped laboratory for experimental purposes.

CONNECTICUT

Care for Tuberculous Patients.—The Board of Apportionment of Bridgeport has been asked to create a special fund of the surplus money in both the health and charities departments, these funds to be used to care for the tuberculous patients now in need, and to build temporary shacks to house the advanced cases for which accommodations cannot now be obtained. About $8,000 will be available for this purpose.

Talks on Ambulance Work.—Dr. Harvey Cushing, Boston, delivered a lecture before the New Haven chapter of the National Red Cross, February 23, on the ambulance work in France, illustrated by photographs.——At the same meeting Miss Sybil Eden, who had been a nurse in Serbia, gave an account of the retreat of the Serbian refugees. The proceeds of these lectures were applied to the work of the local Red Cross.

ILLINOIS

Personal.—Dr. Harry J. Freemmel, assistant physician of the Lincoln State School and Colony, resigned April 1 and

will resume practice in Chicago.——Dr. George P. Gill, Rockford, delivered an address before the Winnebago County Medical Association, March 17, in which he told of his experiences in France.

Chicago

The Sanatorium Troubles.—Following the recent upheaval at the Chicago Municipal Tuberculosis Sanatorium and the resignation of Dr. Theodore B. Sachs, thirteen members of the consulting staff of the sanatorium have resigned: Drs. Ethan Allen Gray, John L. Porter, G. Frank Lydston, William H. Wilder, Orville W. McMichael, Clifford G. Grulee, William Allen Pusey, Frank Billings, Robert H. Babcock, Arthur Dean Bevan, Joseph Zeisler, Arthur R. Edwards and Julius H. Hess.

Personal.—Dr. Giovanni B. Bruno, who has been serving in the Italian army for the past eight months, has been promoted to captaincy in the medical corps and placed in charge of a field hospital on the Isonzo facing Goritz.——Dr. Walter W. Armstrong has been transferred from head of the food bureau to the position of supervision field health officer with, it is said, an accompanying salary cut of $1,200.——Dr. and Mrs. Lewis S. Eastlake have returned after passing the winter in California and Hawaii.——Dr. Duro Guca, chief surgeon of the Bohemian-American Relief Expedition to Serbia and Montenegro, who was recently taken off a liner bound for New York on suspicion of being an Austrian spy, has been freed.——Dr. Arthur R. Elliott delivered an address before the Joliet Medical Society, March 14, on "High Blood Pressure."——Dr. Mortimer Frank will address the Harvard Medical History Club on April 4 and the Johns Hopkins Medical Historical Club on April 6.

MAINE

Feeding and Care of the Baby.—The bimonthly *Bulletin of the State Board of Health of Maine* for March is a forty page publication entitled "The Feeding and Care of the Baby" which takes up the subjects of breast feeding, bottle feeding, milk, weaning, diet in the second year, recipes for food, the general care of the baby, children's ailments, guide boards to infant welfare, and methods of controlling or checking food requirements.

MARYLAND

Health Conference.—The second annual conference of the Maryland Colored Public Health Association was held, March 15 to 17, in Baltimore. Among the speakers were Dr. John M. T. Finney of Johns Hopkins Hospital and Dr. John D. Blake, commissioner of health.

Personal.—Dr. John F. Byrne, Louis Diener and N. Moreland Owensby, Baltimore, have been given commissions in the Maryland National Guard. They have been assigned to the Medical Corps and ordered to report to Maj. Robert P. Bay, chief surgeon of the First Brigade.——Dr. L. R. Cahput has been appointed a member of the staff of Mercy Hospital.

Urges Early Transfer of Quarantine.—Surg. James A. Nydegger, in charge of the local work of the United States Public Health Service, urges an early transfer of the local quarantine station to the federal government. The government has agreed to take over the station, install a night service for the benefit of the shipping interests and take charge of the city smallpox cases as well as cases of cholera, plague or typhus fever that may develop, and also agrees to buy the quarantine property at a figure agreed on.

MASSACHUSETTS

Staff Changes in State Hospitals.—Dr. Jennie G. McIntosh, junior assistant physician at the Worcester State Hospital, has been appointed assistant physician, succeeding Dr. Roy C. Jackson, resigned.——Dr. Beatrice A. Reed has been reappointed junior assistant physician at the Taunton State Hospital.——Dr. Hattie E. Chalmers, Marlboro, has resigned as assistant physician at the State Infirmary.——Dr. Herman Caro of Monson State Hospital is taking a psychopathic hospital training course.

Proposes Consolidation of Boards.—A bill has been introduced into the legislature establishing the Massachusetts Bureau of Registration, which is to take over most of the administrative functions of the boards of registration in medicine, veterinary medicine, pharmacy, dentistry, optometry, embalming and nursing. The bureau will be supervised by a board of three, consisting of the secretaries of the boards of registration in medicine and pharmacy and a third to be designated by the governor from among the membership of the seven boards of registration. The duties of the new bureau will be to receive applications for registration, send out notices to applicants, arrange time and place for examinations, receive fees from candidates for registration, keep the records of examination and registration, receive and investigate complaints, serve as a bureau of information and publish an annual report. For this service the ex-officio members of the board will receive no extra compensation over their salaries as secretaries, but the third member will receive $500 annually in addition to his compensation as member of the board of registration.

Personal.—Dr. H. Louis Stick has resigned as superintendent of the Worcester branch of the State Hospital.——The position of assistant physician at the Deer Island Hospital has been abolished by the mayor and the incumbent, Dr. Edward J. Fitzgibbon, Dorchester, Boston, has been dropped from the city payroll.——Dr. William E. Faulkner of Harvard Medical School has left for France where he will take charge of the second Harvard Medical unit.——Dr. Charles T. Porter, Boston, who has been on duty with the Harvard Hospital unit in France, returned on the *Philadelphia*, which reached New York, March 19.——Drs. William R. Ohler, Edmund F. Walsh and John Alexander Wentworth have been made fellows in chemistry; Dr. William D. Smith has been appointed general assistant in medicine; Leonard T. Troland, instructor in psychology, and Ezra A. Cook, Sidney L. Pressy and Phillip L. Givens have been made assistants in psychology in Harvard Medical School.——Dr. William Hartwell Cressy, Boston, sailed from New York on the *Frederick VIII*, March 4, on his way to Russia as a representative of the Armenian Medical Relief Association of America.——Dr. Laurence E. Poole has resigned as bacteriologist and examining physician at the Tuberculosis Dispensary, Gardner.

MISSISSIPPI

Deem Memorial Picture Unveiled.—March 8, a memorial portrait of the late Prof. Charles S. Deem, superintendent of the Mississippi School for the Deaf, Jackson, was unveiled.

Physicians in State Legislature.—Mississippi has five physicians members of its state legislature. Dr. Carroll Kendrick, Kendrick, is a member of the senate and Drs. Charles A. Everett, Monroe, W. F. Stroud, Pinola; W. J. Redditt, Teoc, and V. Milton Perry, Satartia, are members of the house.

Personal.—Dr. Frank L. Watkins, formerly deputy state registrar in charge of vital statistics in the state board of health, has now located in Jacksonville, Fla., doing similar work for the Florida State Board of Health.——Dr. N. Jose Pinault, Pass Christian, has been appointed, by the pope, commander of the Knightly Order of Gregory the Great.——Dr. William W. Smithson, superintendent of the State Hospital for the Insane Asylum, has resigned.——Dr. George Y. Hicks, Vicksburg, is to succeed Dr. Benson B. Martin as superintendent of the State Charity Hospital, Vicksburg.

State Hospital News.—The House of Representatives, on March 17, passed by a vote of ninety-one to eleven the Kendrick senate bill authorizing the establishment of a hospital for the cure and treatment of tuberculosis in the state. ——The South Mississippi Charity Hospital bill, appropriating $25,000 for the establishment of a state charity hospital in Laurel, passed the state senate by a vote of twenty-eight to four, February 24.——The joint committee of the house and senate appointed to select a site for the proposed new charity hospital, to be built in North Mississippi, has selected Tupelo as the location.

NEW JERSEY

Personal.—Dr. Robert B. Glasgow, editor of the *Burlington Gazette*, who was seriously injured by a train at a grade crossing, has recovered and resumed practice.——A silver loving cup has been presented to Dr. Julius Levy, Newark, head of the Bureau of Child Hygiene of the Board of Health, on behalf of the workers of that department.

Contagious Diseases.—The board of health of Hackensack reports 500 cases of measles with four deaths, and has invited local physicians to attend a conference at which measures will be discussed to check the disease. Reports from the state department of health show that 2,189 cases of communicable diseases were reported during the month of February.

NEW YORK

Memorial Meeting of Academy.—The Rochester Academy of Medicine held a special meeting, March 29, as a memorial

to Dr. John Orlando Roe. Dr. Joseph R. Culkin presented an outlined sketch of the life of Dr. Roe; Dr. Eugene H. Howard made the report of the committee on resolutions; a portrait of Dr. Roe was exhibited and accepted by the president on behalf of the academy; Dr. Bradford A. Richards presented a paper on "The Scientific Contributions of Dr. Roe," and Dr. Wendell C. Phillips, New York, presented an address on "John O. Roe as a Scholar and Man, His Personal Characteristics and Worth."

The Fronczak Dinner.—At the complimentary dinner given to Dr. Francis E. Fronczak, health commissioner of Buffalo, by his friends of the medical profession in the city, about 110 were present. Dr. F. Park Lewis presided as toastmaster and the toasts and responses were as follows: "Our Guest," Health Commissioner Dr. Francis E. Fronczak; "The Doctor of Medicine and the Military," Lieut.-Com. John E. MacEvitt, editor of the *New York State Medical Journal;* "The Doctor of Medicine and the Public Health," Dr. Linsly R. Williams, deputy health commissioner of New York; and "The Doctor of Medicine in Public Life," Dr. Otto Pfaff, mayor of Oneida.

New York City

Surgeon Wins Suit.—A jury in the Supreme Court, March 16, decided in favor of Dr. Herbert W. Wooton, who was sued for $50,000 damages for alleged neglect in operating on Zaidee Roland.

Pediculosis Among Immigrants.—Ninety-one immigrants who arrived on the *Patris* from the Piraeus, Greece, March 21, were placed under quarantine on Hoffman Island owing to the presence of pediculosis.

Diphtheria in Hospital.—Of the two hundred nurses in the Polyclinic Hospital, fourteen developed symptoms of diphtheria, March 12. In seven of these cases positive diagnoses were made, and all the nurses who had been exposed were isolated. This prompt action on the part of the authorities put a speedy end to the miniature epidemic.

Personal.—Dr. John E. Dougherty was appointed superintendent of the Greenpoint Hospital, Brooklyn, March 18, succeeding Dr. Charles Sanborn, resigned.——Dr. W. G. Hague delivered an address on "The Treatment of Tuberculosis" before the Spartanburg County (S. C.) Medical Society, March 14.——Dr. Samuel J. Kopetzky read a paper on "The Significance of Laboratory Findings for Diagnosis and Therapy in Otology" before the section on otology and laryngology of the College of Physicians of Philadelphia.

PENNSYLVANIA

Communicable Diseases.—Sunbury's board of health, March 21, ordered public schools closed and all children under 16 years of age to stay away from picture shows and public places of amusement because an epidemic of measles had become serious. There were 117 cases reported.

Philadelphia

Personal.—Dr. Louis N. Robinson was elected president of the Philadelphia Branch of the American Institute of Criminology at its sixth annual meeting, March 15.——Dr. L. Webster Fox has been chosen president of the Pennsylvania Home Teaching School and Free Circulating Library for the Blind.

Rush Society Lecture.—Dr. John M. T. Finney of Johns Hopkins University will deliver the fifteenth Rush Society Lecture in lecture room B of the medical laboratories of the University of Pennsylvania, Thirty-Sixth and Pine Streets, April 6, on "What Constitutes a Surgeon." This lecture is also the annual address before the Undergraduate Medical Society of the University of Pennsylvania.

Money for Hospital in France.—A check for $7,830.42 for the American Ambulance Hospital at Neuilly, France, has been sent by Dr. J. William White to the treasurer of the Committee on Philadelphia Wards in the American Hospital in Paris, completing the third subscription of $15,000. The money was collected from professors, alumni and friends of the University of Pennsylvania by Dr. White.

University Plans Military Course.—A meeting of the committee on military affairs of the University of Pennsylvania and three deans of that institution was held in the office of George Wharton Pepper. They discussed and outlined plans for the course in military training to be adopted by the university. While it is not the idea of the trustees to institute a course of military training equal to that given by the government, the training will be sufficient, however, to qualify the students to be reserve officers in the army. A special committee of trustees comprises ex-attorney-general, John C. Bell, Dr. Robert G. Le Conte, Joseph F. Rosengarten, John Cadwallader and Mr. Pepper.

Hospitals Fix Schedule for Working Men's Compensation Patients.—Twenty-seven hospitals in the city have entered into a new combination fixing a schedule of prices for workmen's compensation patients, following a protest to Governor Brumbaugh by Harry A. Mackey, chairman of the workmen's compensation board, who charged petty graft on the part of the institutions. The hospitals in the new combination are as follows: Howard, Woman's, Children's, Garretson, Fred Douglass Memorial, Samaritan, Germantown, Jewish, Mount Sinai, University of Pennsylvania, Jefferson, Philadelphia General, Presbyterian, German, Hahnemann, St. Lukes, Pennsylvania, West Philadelphia, Roosevelt, Frankford Medico-Chirurgical, Episcopal and Stetson.

SOUTH CAROLINA

Shack Donated.—A hospital shack has been donated to the Tuberculosis Camp, Columbia, by the Good Will Society. Work has been begun on the hospital nurses' shack and the sun parlor will soon be in process of erection.

Advanced to Class "A."—The Medical College of the State of South Carolina, Charleston, was advanced to class "A" at the last meeting of the Council on Medical Education, and was also elected a member of the Association of American Medical Colleges.

State Association Meeting.—The annual meeting of the South Carolina Medical Association will be held in Charleston, April 18 to 20, under the presidency of Dr. Gottlob A. Neuffer, Abbeville. The address in medicine will be delivered by Dr. Lewellys F. Barker, Baltimore; that in surgery by Dr. William J. Mayo, Rochester, Minn., and that in pediatrics by Dr. Maynard Ladd of Harvard Medical School.

TENNESSEE

State Society Meeting.—The annual meeting of the Tennessee State Medical Association will be held in Knoxville, April 4 to 6, under the presidency of Dr. Edward C. Ellett, Memphis. The annual banquet will be held on the evening of April 5.

Banquet for Duncan Eve and Duncan Eve, Jr.—The members of the Eve Society of the Vanderbilt Medical School gave a banquet at the Tulane Hotel, Nashville, February 17, in honor of Dr. Duncan Eve and Dr. Duncan Eve, Jr. R. M. Torbett presided as toastmaster.

Personal.—Dr. George F. Aycock, Nashville, has been elected superintendent of the Davidson County Tuberculosis Hospital, vice Dr. James M. Oliver, resigned.——Dr. Isaac J. Brooks, Bearden, has resigned as physician of the Brushy Mountain Branch Prison, Petros.——Dr. Lucius D. Hill, Jr., has assumed his duties as medical director of the Lincoln Memorial Hospital, Knoxville.——Dr. Morris D. Hartman, Nashville, has started for Europe, where he expects to be on duty with the Austrian Hospital Corps at Budapest.

UTAH

Volunteer Staff Organized.—A plan has been submitted to the commissioners of Salt Lake County by Dr. William R. Calderwood, president, and Dr. John S. Sharp, a member of the society, for the organization of a staff of physicians for the County Hospital to serve without pay.

Personal.—Dr. Robert W. Ashley was appointed city health commissioner of Salt Lake City, March 6, succeeding Dr. Samuel G. Paul.——Dr. Thomas J. Howells has been appointed assistant health commissioner of Salt Lake City.——Dr. S. Devon Calonge, Salt Lake City, is under quarantine in his home on account of diphtheria.

VIRGINIA

Red Cross Branch Organized.—The Alexandria Chapter of the American Red Cross was organized, February 23. Dr. Edward A. Gorman, city health officer, called the meeting to order and explained the object. First aid classes are to be organized in the near future.

Hospital Items.—Plans have been made for the incorporation of a hospital for Williamsburg. Dr. Lawrence T. Price, Richmond, president of the organization, and Drs. R. Pollard Stryker and Manuel F. Torregrosa will be associated with him in the management and conduct of the hospital, which will have a capacity for from thirty to forty patients.——

At a mass meeting recently held in Berkley, definite steps were taken for the establishment of a public hospital in that city and a committee was appointed to confer with the physicians of Berkley as to the feasibility of the project.

CANADA

Convalescent Home.—A home for convalescent soldiers from the Canadian forces is being equipped at Kingswood, near the Crystal Palace, England, and will be opened for patients by the end of March. It is being voluntarily maintained by the Massey-Harris Company, Toronto.

Honors to McGill Graduates.—Capt. Francis A. C. Scrimgeour of the class of 1905, medical officer of the Fourteenth Royal Mounted Battalion, has been given the Victoria Cross, and Major A. H. Chisholm of the same class, an officer of the Staff Army Medical Service, has been given the Distinguished Service Order by the British government.

Hospital Units Offered.—President Braithwaite of the Western University, London, Ont., has offered to the Militia Department a complete hospital staff for overseas service. The University of St. Francis Xavier, Antigonish, N. S., has offered a hospital unit for overseas service. The offer has been accepted by the war office and mobilization has commenced. The unit is to be under the command of Capt. Roderick C. McLeod, C. A. M. C., North Sydney.

Hospital News.—The Isolation Hospital at London, Ont., has been converted into a military hospital, and a building for the care of infectious diseases will be erected on the grounds of the present hospital.——The Royal Columbian Hospital, New Westminister, B. C., is asking the British Columbian government for an annual grant of $16,000 instead of $7,000 as formerly. About $5,000 is also being asked for capital expenditure. Something like $42,000 is owing to the hospital by patients, and it is impossible to collect this from the patients.

Personal.—Col. H. S. Birkett, who has been in Canada on military business, has returned to Boulogne, France, and resumed command of the McGill General Hospital. During his absence, Lieut.-Col. John M. Elder, surgeon-in-chief of the unit, was the commanding officer. The hospital now has over 700 patients, mostly medical.——Lieut.-Col. George E. Beauchamp, commanding the No. 6 General Hospital from Laval University, Montreeal, has been appointed to a full colonelcy, while Major B. G. Bourgeois, of the same unit, has been promoted to the rank of lieutenant-colonel.——Col. Henry D. Johnson, Charlottetown, P. E. I., has been appointed officer commanding the Canadian Medical Services' Special Hospital for Rheumatism, which has been established at Buxton, Derbyshire, England. Capt. Victor L. Goodwill of Charlottetown is second in command.——There are now in England about sixty hospitals and convalescent homes for Canadians, which have been established under the direction of Col. George S. Rennie, Hamilton, Ont., A.D., M.S., at Shorncliffe.——Col. Wallace A. Scott, Toronto; Maj. Alexander J. Mackenzie, Toronto, and Capt. J. Bryce McMurrich, Toronto, are attached to Moore Barracks, Shorncliffe.——Dr. Hugh A. Farris, superintendent of the St. John County Hospital for Tuberculosis, New Brunswick, has resigned.——Dr. Kate McMillan, Jacquet River, N. B., is home from Korea. Dr. McMillan went as a medical missionary to Korea in 1901, and will return after a short vacation.——Maj. H. E. Monroe, Saskatoon, Sask., who returned from the front a short time ago, has been given command of the Saskatchewan Hospital Unit which is now being mobilized.——Capt. Archibald J. Gilchrist, R. A. M. C., Toronto, mentioned on two occasions in despatches for distinguished services in the field, has been awarded the Military Cross. Captain Gilchrist is at present in a hospital but his condition is not considered serious.——Lieut.-Col. Samuel W. Hewetson, Calgary, Alberta, is now in command of No. 8 Field Ambulance.——Lieut.-Col. J. Alexander Hutchison, Montreal, has left for England, where he will probably be attached to one of the base hospitals.

GENERAL

Medico-Psychologists to Meet.—April 4, the seventy-second annual meeting of the American Medico-Psychological Association will be held in New Orleans under the presidency of Dr. Edward N. Brush, Towson, Md.

Mental Hygienists to Meet.—The second convention of societies for mental hygiene will be held at the Hotel Gruenewald, New Orleans, April 3 and 4, under the auspices of the National Committee for Mental Hygiene, and the Louisiana Society.

Limits Enrolment of Students.—A resolution recently adopted by the board of trustees of the University of Pennsylvania limits the classes for the first and second years in the School of Medicine to 100 students each. This is the fifth school to limit the enrolment in its classes, the other four being: Johns Hopkins University, Medical Department; Leland Stanford Junior University, School of Medicine; Rush Medical College, and the University of Minnesota Medical School.

Personal.—Dr. Len L. Culp, for several years physician at the Red Lake Agency, Bemidji, Minn., who has been in the United States Indian Service for ten years, has been appointed special physician for the United States Indian Service at large.——Dr. James Hunter Wells, Portland, for twenty years a medical missionary of the Presbyterian board and one of the founders of Pyengyang Station, and the Caroline A. Ladd Hospital, Korea, has resigned to accept the position of medical officer of the Seoul Mining Company, located at Holkol, 50 miles east of Pyengyang. Dr. Wells conducts two hospitals at the two mines which are in operation.——Dr. Peter K. Olitsky, who has been ill with typhus fever at Laredo, Texas, is reported to be improving.——Dr. Robert H. Crawford, one of the Red Cross surgeons engaged in touring the country for first aid educational purposes, was injured in a wreck on the Illinois Central Railroad near Greenwood, Miss., March 7.

Disbursements of Rockefeller Foundation.—Of the $1,200,000 recently distributed by the Rockefeller Foundation, the largest sum by far went to the Rockefeller Institute for Medical Research, $1,000,000 having been given for an additional endowment needed in connection with the Department of Animal Pathology recently established at Princeton, N. J. The Rockefeller Institute for Medical Research also received $25,000 for the cost of medical research and such medical supplies and services as the institute may appropriately furnish at the seat of war in Europe. The major part of this appropriation will be used for the support of the research and hospital work which is being conducted by Dr. Alexis Carrel. Among other appropriations was that of $125,000 to the China Medical Board for the purchase of additional property adjoining the Union Medical College in Peking, and $50,000 to the International Committee of the Young Men's Christian Association in support of the work in the military prison camps of Europe.

Examinations for Statistician and Physicist.—The United States Civil Service Commission announces that an open competitive examination will be held, April 25, for the position of chief statistician for vital statistics (male), in the Bureau of Census, Department of Commerce. The position carries a salary of $3,000 a year. Applicants must be graduates of recognized medical schools and must have had at least four years' experience in charge of vital statistics in a city or state, or must have had positions of similar importance requiring expert knowledge of vital statistics, and must be between 30 and 50 years of age. Applications may be made to the United States Civil Service Commission, Washington, or to the secretary of the United States Civil Service Board at Boston, Philadelphia, Atlanta, Ga., Cincinnati, Chicago, St. Paul, Seattle, San Francisco, New York, New Orleans, Honolulu, St. Louis, Balboa Heights, C. Z., and San Juan, P. R.——An open competitive examination for assistant physicist qualified in spectroscopy will be held by the United States Civil Service Commission, May 3, at various places in the United States. The salary ranges from $1,400 to $1,800 a year. Applicants must have received the degree of Doctor of Philosophy or have had three years of postgraduate training in optics, including spectroscopy. Applicants should apply for permission to take the examination to the United States Civil Service Commission, Washington, D. C., or the local secretary of the United States Civil Service Board.

FOREIGN

Weizsäcker Endowment at Tübingen.—The University of Tübingen is the sole legatee of the property of Dr. T. Weizsäcker of that place, to found a memorial fund bearing his name. The income from it is to be used to promote scientific research.

Payment for Medical Attendance on Refugees.—Dr. P. R. Folmer of Sloten, Holland, writes to the *Nederlandsch Tijdschrift voor Geneeskunde* in regard to medical practice among the refugees from the flooded districts in northern Holland. He says that these people, with their domestic

animals, have settled temporarily at various points and some have called on him for medical attendance. The question is, shall they be treated gratuitously or not, or shall the medical attendance be given in the name of their family physician at home, and an account rendered to the latter for him to collect later for the services rendered? The writer rejects the proposition to treat them gratuitously, as many of them are abundantly able to pay for medical services. He inclines to the other plan, and the *Tijdschrift* endorses its wisdom. It is a simple matter, he says, to inquire the name of the home physician and to render him an account of the services rendered. He will know whether the family is able to pay, and can collect the amount due. As the physicians in the flooded district have suffered pecuniary loss with all the other inhabitants, this plan will help to put them on their feet again.

Deaths in the Profession Abroad.—Léon Labbé, aged 84, a leading Paris surgeon, member of the Institut de France and of the Académie de Médecine.——G. Ballet, professor of nervous and mental diseases and the pathology of the brain at the University of Paris, aged about 60.——J. Van Deventer, chief of the national inspection of hospitals service for the Netherlands, aged 67. He is credited with being the pioneer in introducing professional training for nurses, having been able to equip the Buitengasthuis hospital at Amsterdam in 1880-1885 with a force of professionally trained nurses.——M. Köppen, professor of psychiatry at the University of Berlin, aged 57.——F. Schenck, professor of physiology at the University of Marburg, aged 54. Some of his textbooks on physiology are in general use.——G. Magini, research worker and professor of histology, microscopic technic and general physiology and director of the institute for histology at the University of Rome, aged 65.——F. E. Fischer, professor of surgery at the University of Strasburg, aged 68.——W. Löb, until recently privat-dozent for chemistry at the University of Berlin but moved to Vienna this year, author of "Electro-Chemistry of Organic Compounds," which has appeared in several editions and been translated into English, aged 44.——G. Lihotzky, privat-dozent of gynecology and obstetrics at the University of Vienna.

WAR NOTES

American Surgeons to Go to the Front.—It is announced that four surgeons from the American army service list will be permitted to inspect the British Army Medical Corps at the front.

Wounded and Sick Students Sent to University Towns to Convalesce.—The medical department of the German army has obtained the consent of commanding officers to permit sick and wounded university students to be sent to Giessen or Darmstadt on demand, where special university courses have been organized to enable them to continue their studies.

Banquet to Harvard Surgical Unit.—Medical Officers of the British Expeditionary forces in France recently gave a large banquet to the Harvard Surgical Unit on the occasion of its moving back into canvas for summer quarters. Speeches were made by Col. Sir Bertram Dawson, Col. Sir Almroth E. Wright, General Sawyer, Col. Fullerton, and others, and Col. David Cheever of Harvard replied on behalf of the unit.

The Berlin Fund for Civilian Physicians Serving with the Army.—A Berlin exchange states that the "Kuratorium" war fund for the physicians of Greater Berlin amounted at the close of 1915 to a total of $92,355 (369,432 marks). The associations of physicians connected with the state insurance system donated 215,777 marks toward the above total; other medical associations, 8,774, and the medical chambers of the province 55,000 marks, while individual donations totaled 87,276 marks.

Consulting Dispensaries for Venereal Disease.—The leading life insurance company in cooperation with the local state insurance companies and the organized medical profession have opened a consulting dispensary for venereal diseases at Bremen. A similar dispensary has also been organized under local auspices of the same kind in a suburb of Berlin. No attempt at treatment will be made but only advice given as to ways and means to obtain treatment and prevent contagion of others. The military authorities have agreed to refer to these "Beratungsstellen," on dismissal from army service, the men with venereal disease. It is hoped to accomplish much in the way of prophylaxis through them.

PARIS LETTER

PARIS, March 2, 1916.

The War

EMPLOYMENT OF CRIPPLES

M. Métin, the minister of labor, has just arranged with General Galliéni, the minister of war, the consolidation of the services in their respective departments which are concerned with the employment of the soldiers who have been crippled, mutilated or enfeebled by war. The bureau is to be installed in the same building in which the offices of general statistics are lodged. The officers of the organizations now in existence for the same purposes will soon be placed in adjacent buildings. Thus the work of the various branches will be coordinated.

EXTRACTION OF PROJECTILES WHICH HAVE LODGED IN THE LUNGS

At a recent session of the Société de chirurgie de Paris, Dr. Mauclaire reported five cases of extraction of projectiles from the lungs showing that this removal may be followed by complications. In Mauclaire's cases, these complications were slight; hemoptysis (two cases), pleural serous effusion (three cases). They are not always slight, however. Mauclaire believes, therefore, that projectiles should not be removed from the lungs unless they produce very serious pain, repeated pleural effusions or pulmonary congestions.

Dr. Pierre Duval remarked that the technics recommended by Marion, by Mauclaire and by others, for the extraction of projectiles from the lungs, are all somewhat defective. This is because surgeons have, up to the present time, had too timid a respect for the lung and the pleura. The lung may be operated on without special instruments or apparatus according to the ordinary principles of surgery. Total pneumothorax, partial exposure of the pulmonary lobes, freeing them from adhesion on all sides, exposure and delivery of the lobes in order to reach the mediastinum or the diaphragm, are simple procedures without particular danger. The lung is a tolerant organ which may be operated on as easily as an intra-abdominal viscus. There is no need for large thoracic openings; the resection of a single rib and retraction with the excellent retractor of Willy Meyer give all the view of the thorax that is necessary.

TRUE AND SIMULATED SCIATICA

At the Réunion médicale de la VI-e armée, Dr. A. Barré reported that, having an opportunity to study about 100 sciatica patients, he undertook to find a number of objective signs which would permit an easier diagnosis of true sciatica and the recognition of simulation. He believes that especially in military surgery the "classic" signs of sciatica are of little value. The most careful examiner runs a risk, according to the usual method, of suggestion. He advises examination of the sensibility "by surprise" and mentions several devices for the purpose. He attaches special importance to the "sign of the adductors," which consists in pinching forcibly between the thumb and fingers the internal portion of the mass of the adductors of the healthy side and the affected side. The pains are much more marked on the side of the sciatica. The modifications of the Achilles tendon reflex are often slight or nonexistent, while the "retromalleolar reflex" described by Barré is much diminished or abolished; this objective sign has great practical value. The muscular atrophy is ordinarily very slight and rarely exceeds 1 or 2 cm. There often is none in the thigh or the leg, while it is possible to perceive pronounced atrophy of the extensor brevis digitorum pedis, which is especially easy of examination. This "sign of the extensor brevis digitorum pedis" is quite frequent and generally early. The hypotonia of the muscle innervated by the painful sciatic nerve is often difficult to recognize when the attempt is made to demonstrate it by palpation or sight. Barré indicates two indirect objective signs of this hypotonia: the relaxation, the slight tension and the easy depressibility of the Achilles tendon and consequently, the lower tone of the percussion sound of this tendon and the lowering of the heel on the side of the sciatica. Another very early and very reliable sign is the lowering of the temperature of the affected side in comparison with that of the healthy side. The region in which this sign should be sought especially and which is also the only region in which at times it exists is the external surface of the leg in its lower one-half or one-third. Independent of these signs, four of which are absolutely new, Barré mentions the diminution or abolition of the cutaneous plantar reflex, definite modifications of the arterial tension and certain disturbances of the sensibility. Frequently percus-

sion of the bony projection between the Achilles tendon and external malleolus for the purpose of exploring the retro-malleolar reflex is less painful on the affected side than on the healthy side. This paradoxical fact helps to establish the reality of the sciatica. In every case in which Barré was unable to find any of the objective signs described, he was able to assert that there was simulation, to confute the malingerers and to obtain immediate or extremely rapid "cures."

Personal

At a recent session the Société de chirurgie de Paris elected Dr. Depage of Brussels and Dr. Soubbotitch of Belgrade as corresponding members.

LONDON LETTER

LONDON, March 6, 1916.

Report of the Royal Commission on Venereal Disease

The final report of the royal commission appointed in 1913 to inquire into the prevalence of venereal diseases in their effects on the health of the community, and the means by which these can be alleviated or prevented, has been issued. Among the commissioners are Sir Malcolm Morris, Dr. F. W. Mott, and Mr. James E. Lane. The disadvantage of issuing the report when all public activities are preoccupied in fulfilling the manifold needs of the war is recognized. But it has been published because the conditions now existing and those which must follow on the conclusion of the war imperatively require that action should be taken without delay. There is no reason to believe that the percentage of infection in the naval and military forces is now greater than in normal times; but there can be no doubt that the total of infected persons has increased. The military authorities are doing their utmost to provide treatment, but the civil population requires corresponding measures, and all experience shows that after a war an excessive incidence of disease is certain to occur, even in districts previously free. The commissioners are convinced, therefore, that it will not suffice to establish treatment centers in places in which sailors and soldiers are congregated, and that these will be needed in most of the larger and in some of the smaller towns.

PREVALENCE

Except in the case of the army and navy, there are at present no means of arriving at an accurate estimate of the prevalence of venereal diseases. A large number of examinations in institutions and among special sections of the population, including postmortem tests, show an unexpectedly large prevalence. The recorded death rate per million for syphilis and three consequential diseases, distributed among eight classified groups of the population, shows the prevalence to be greatest in the unskilled labor class, and least among miners and agricultural laborers. But at present registration is defective, many deaths due to this cause escaping recognition. Sir William Osler considers that "of the killing diseases syphilis comes third or fourth." While unable to arrive at any positive figures, the commissioners come to the conclusion that the number of persons who have been infected with syphilis, acquired or congenital, cannot fall below 10 per cent. of the whole population in the large cities, and that the percentage for gonorrhea is greater.

ECONOMIC EFFECTS

It is estimated that from 30 to 50 per cent. of sterility among women is due to gonorrhea, and of registered still-births probably at least half are due to syphilis. Of 1,100 children in the London County Council schools for the blind, at least 55.6 per cent. of the cases are attributable to venereal diseases in the parents.

FREE TREATMENT

Except in the case of the army and navy, the commissioners find the existing facilities for treatment "extremely deficient." They are of opinion that no adequate system of treatment will be organized unless responsibility for it is undertaken by the state. Measures should be taken to render the best modern treatment readily available for the whole community, by the use of special wards in the general hospitals, rather than by the establishment of separate institutions. The local health authorities should organize schemes for dealing with the diseases, and as a first step should approach the general hospitals in their areas with a view to making the necessary arrangements. Treatment at any institution should be free to all, and there should be no refusal to treat a patient who is unwilling to go to his own physician. Special arrangements, such as evening clinics, should be made for the working classes. Subject to proper safeguards, local authorities should be empowered to supply salvarsan or its substitutes gratuitously to physicians. Extended facilities should be made available for diagnosis by laboratory methods, and be organized by the larger local authorities, the fullest use being made of the laboratory facilities at universities and hospitals.

COMPULSORY DETENTION

The commissioners report against any system of compulsory personal notification, believing that it would fail to secure the advantages claimed, and that better results may be obtained by improved facilities for treatment, and by a policy of education regarding the serious nature of these diseases.

THE MARRIAGE LAWS

The proposal of the divorce commission that statutory recognition should be given to the principle that infectious venereal disease constitutes an incapacity for marriage and should be a ground for divorce is endorsed. A communication made bona fide by a physician to a parent, guardian, or other person directly interested in the welfare of a woman or man, and with the object of preventing or delaying a marriage with a person who is in an infectious condition should be a "privileged" communication. This means that the person making it cannot be made responsible for libel as at present.

A FRANKER ATTITUDE

Measures are proposed to insure that every medical student has adequate practical instruction in these diseases. Their treatment by unqualified persons is condemned as disastrous, and constituting one of the principal hindrances to eradication. The recommendation of the Select Committee on Patent Medicines, that all advertisements of remedies for these diseases should be prohibited, is endorsed. Friendly societies which debar from sick benefit illness due to misconduct are urged to revise their practice. A franker attitude toward these diseases is recommended, as it would lead to less concealment involving recourse to quack remedies. On the question of education, it is urged that more careful instruction should be provided in regard to moral conduct as bearing on sexual relations. It should be based on moral principles and spiritual considerations and not merely on the physical consequences of immorality.

The War

THE HEALTH OF THE NAVY

Sir Arthur May, K.C.B., medical director-general, says that the navy is now at concert pitch, and to this state of affairs, which is a matter less of material than of personnel, the medical department has largely contributed. Notwithstanding the hardships of the long vigil, the health of the fleet today is better than it has ever been since statistics have been taken. At least half the physicians now serving in the navy have left civilian practice during the last eighteen months. No profession stands to lose so much by service with the forces as does the medical profession, simply because it is a profession which depends to so great an extent on personality. Patients are notoriously fickle, and it is possible that by the time the physician returns to civil life he will have to rebuild his practice almost from the beginning. Time after time since the war began he has been approached by physicians who have said, "I would join tomorrow if it were not for my wife and children." In such cases the director-general uses no pressure, but many men have left family and practice to come and do their share. Before the war the insufficiency of physicians in the navy had been a great shadow on his mind, but it has been lifted by the splendid manner in which civilian physicians have come forward.

PULMONARY TUBERCULOSIS IN THE ARMY

An outcry has been raised because of the discharge from the army of a considerable number of men suffering from pulmonary tuberculosis without pensioning them. The military authorities have replied that the disability or injury of a man must be due to his service in order to qualify him for a pension, and that in such cases the medical board has decided that the disease was not due to service. In some cases men manifested the disease a few months after enlistment before exposure to any hardships. It is no doubt true that under the tremendous pressure of work in examining recruits many men must have been passed suffering from the disease in an early form. Moreover, those who have recovered from the disease have often concealed the fact in

their desire to enlist. Of course the difficult question must often arise how far recrudescence is due to hardships to which the man has been exposed. As some very hard cases occur under the present condition, the government has set up a new body to deal with patients with tuberculosis other than those entitled to a pension under the present conditions.

BUDAPEST LETTER

BUDAPEST, Feb. 12, 1916.

The War

MEDICAL TREATMENT OF FAMILIES OF SOLDIERS WHO ARE AT THE FRONT

At the commencement of the war, the magistrates of larger cities entrusted the medical attendance of wives and children of soldiers to the medical officers of health, who also treated the poor. The number of such patients requiring medical attendance increased so greatly, however, that the medical officers declared themselves unable to fulfil this duty. The magistrates resolved, therefore, that a certain amount (the lowest items of the medical tariff of the respective city) should be paid to all doctors who voluntarily undertook the treatment of this class of patients. The voluntary list in most cities contains well-known names, even professors who, although much occupied without this additional work, undertake it. The expense to the cities is not important, as many doctors do not claim any salary and others, who do claim it, give this remuneration to the Red Cross organizations.

A PUZZLING INFECTION

At Balassa-Gyarmat, a large provincial town, a puzzling endemic condition occurred. In January of this year a wounded soldier was admitted to the military hospital. He had been wounded in the right shoulder nine days before admission. At the end of the same month he began to have fever, without the origin of the fever being discovered. The man suddenly became bedridden and died. Postmortem examination revealed the presence of a liver abscess, which had ruptured into the pleural cavity; otherwise there were no pathologic changes. During the first fortnight in February there were six similar cases with four deaths. The bacteriologic examination made by Professor Buday revealed the presence of a hitherto unknown anaerobic bacillus, which was present in quantities in the pus of the liver abscess. No other pyogenic organisms were found. Buday grew the organism in pure culture. By inoculating a rabbit with it he produced liver abscesses. In a few instances, abscesses appeared in the muscles and bone marrow of the experimental animals. As all the affected soldiers have been wounded ones, Buday assumes that the infection was brought into the hospital by the first soldier. Probably this new infection will be observed in other places.

HEALTH RESORT FOR TUBERCULOUS SOLDIERS

The Ministry of War has purchased Ujtatrafured—the foremost health resort in Hungary for tuberculous diseases—in order to erect a huge sanatorium for soldiers. The sanatorium will be built in modern style, and will probably serve its purpose also after the termination of the war. The cost with the purchase price will come to about 3 million kronen ($600,000).

Smallpox Epidemic in Hungary

Owing to the noncompulsory vaccination in neighboring countries, sporadic cases of smallpox have occurred in different places, chiefly among soldiers coming from the borders (not from the front). As our soldiers are, without exception, revaccinated, the epidemic could not attack our army. In fact, there are no cases at all at the front, only on the border in newly recruited soldiers, who were civilians one or two weeks ago. In order to protect the public from smallpox, the members of the Committee on Public Hygiene have ordered compulsory revaccination of all grown persons who were not vaccinated within the last five years. In municipalities health officers vaccinate free all those presenting themselves. There are about fifteen vaccine making institutions in Hungary, so there is plenty of vaccinating material.

The Death of Prof. Béla Alexander

Prof. Béla Alexander, director of the radiologic institute of the Budapest Royal Hungarian University, died at the age of 57 in Budapest, February 10. His name was widely known because of his researches in the domain of the Roentgen rays and allied subjects. He invented the making of plastic Roentgen-ray pictures, without the use of stereoscopic apparatus and simply by means of photographic technic. He was collaborator of the leading foreign Roentgen-ray journals, as the *Fortschritte auf dem Gebiete der Röntgenstrahlen* of Hamburg and the *Archives of the Roentgen Ray* of London. Only a few weeks before his death he began to write a large work with the title "War Radiology." His greatest literary work was "Die Untersuchung der Nieren und der Harnwege mit X-Strahlen" ("The Examination of the Kidneys and Urinary Tract by X-Rays"). This work was published in 1912 in Leipzig and has been translated into several foreign languages.

BERLIN LETTER

BERLIN, Feb. 8, 1916.

Congress for Internal Medicine at Warsaw

The German Congress for Internal Medicine will be held in Warsaw May 1 and 2. Last year a similar congress for surgery was held in Brussels. At this congress the diseases which are of particular importance at this time, especially typhoid, typhus, cholera, diarrhea, diseases of the heart and nephritis, will be discussed. Case reports but no papers will be read, and these will be open for discussion. Attendance will be limited to the military and civil physicians of the German Empire and its allies. Physicians of neutral countries and countries with which the central powers are at war will not be admitted. Inasmuch as this congress will be held in occupied enemy's territory, the participants must be provided with the necessary passes. The provision must be made, however, that the congress can be held only if the political and military situations prevailing now are still operative in May. We do not doubt, however, that present conditions will remain unaltered and that Warsaw will be available as a meeting place for the congress; there is little likelihood that the war will be terminated before that time. There need be no fear with regard to the feeding and housing of those who attend the congress.

Prices of Foods

The Commandant at Berlin and Mark Brandenburg, February 1, issued an order which set the price of flour as follows: 1 pound of rye flour, 22 pfennige (about 6 cents); one pound of wheat flour, 24 pfennige; 1 pound of pure wheat flour, 30 pfennige. The so-called German black bread (rye bread) is whiter than in peace times, because of the considerable addition of wheat flour; and the German "bun" (semmel), which formerly was very dark in color, has now just about the same appearance as it had in normal times.

According to the last official report from Berlin, the price has been reduced considerably for beef, veal and mutton, as well as for spinach and many other vegetables. According to the quality of the meat, 1 pound of beef costs from 1 mark 66 pfennige to 1 mark 82 pfennige (from 40 to 45 cents); veal, from 1 mark 80 pfennige to 1 mark 89 pfennige; mutton, from 1 mark 73 pfennige to 1 mark 93 pfennige; pork, 1 mark 40 pfennige. Butter costs 2 marks 68 pfennige a pound; 10 pounds of potatoes 40 pfennige; one egg 24 pfennige.

Artificial Limbs, and Care of Crippled

During the last few days the subject of providing artificial limbs and the care of the crippled has received considerable attention, and will be made the special order of business at the approaching congress of the German Association for the Care of the Crippled, and the German Orthopedic Society, to be held in Berlin. The basis of all this discussion will be in the papers read recently at the Berlin military surgeons' meeting by Professors Spitzy of Berlin and Wullstein of Bochum. Professor Spitzy, the director of an orthopedic institute, talked about work-therapy and schools for invalids. Spitzy's orthopedic institute, consisting of twelve divisions, with 3,500 beds, is without orthopedic aids, such as prothesis factories, barracks for the housing of schools for invalids, construction bureaus, etc. In the city there are forty-two barracks, each housing a hundred men, and fourteen of these are set aside for schools. In these school barracks provision has been made for thirty-five different vocational departments, some for hand-work and some for mechanical work, in which the invalids can be trained and instructed. There are eight instruction rooms or auditoriums for theoretical work and ordinary school work, as well as trade schools. Facilities exist for instruction in music, embroidering and crocheting, mechanical drawing, modeling, etc. In a school for the one-armed, special attention is given to the training of these persons, and agricultural schools are also in existence.

Deaths

Frank J. Lutz, M.D., a member of the Board of Trustees of the Association, and prominent as a surgeon of St. Louis, died at his home, March 24, from heart disease.

He was born in St. Louis, May 24, 1855, and after taking his A.B. degree at St. Louis University, entered St. Louis Medical College and was graduated therefrom in 1876.

He was a Fellow of the American Medical Association; a member of the House of Delegates in 1903, and had been a trustee since 1910. He was ex-president of the Missouri State Medical Association, and was chairman of the Judicial Council of that body since its reorganization in 1903. He had also been president of the National Association of Railway Surgeons and Southwestern Association of Railway Surgeons and had been secretary of the St. Louis Surgical Society since its organization. He was a Fellow of the American College of Surgeons, a member of the American Surgical Association, International Surgical Association, Association of Military Surgeons of the United States and Surgeons' Club of St. Louis.

Soon after his graduation Dr. Lutz began the teaching of surgery and held successively the positions of instructor in clinical surgery in his alma mater, professor of surgical pathology in Beaumont Hospital Medical College and professor of surgery in the St. Louis University School of Medicine and the Medical Department of Washington University.

He was surgeon in chief to the Alexian Brothers Hospital and to the Josephine Hospital, St. Louis, and was also a member of the staff of the Barnard Free Skin and Cancer Hospital. From 1893 to 1897 Dr. Lutz was a member of the Missouri State Board of Health; from 1886 to 1904 he was surgeon general of Missouri with the rank of brigadier general, and was at one time vice president of the St. Louis Police Board.

FRANK J. LUTZ, M.D., 1855-1916

During the forty years of his professional life spent in St. Louis, one of the most lasting services rendered the medical profession was his work in building up the St. Louis Medical Library which is now the library of the St. Louis Medical Society. In recognition of this service the members of the society presented a life size bronze medallion of Dr. Lutz to the society at its meeting Jan. 29, 1916, at which Dr. Amand Ravold paid an eloquent tribute to the untiring and unselfish devotion of Dr. Lutz as librarian since the foundation of the library.

Maximilian Frederick Clausius, M.D., U. S. I. S., Siletz, Ore.; Bennett Medical College, Chicago, 1886; University of Buffalo, N. Y., 1881; aged 63; a Fellow of the American Medical Association, and a member of the Association of Military Surgeons of the United States; formerly a practitioner of Palatine, Ill.; for many years an acting assistant surgeon, U. S. Army, with service in the Philippines; more recently a physician in the United States Indian Service on duty at the Siletz Agency; died at his home, February 23, from carcinoma of the stomach.

Bernard Wolff, M.D., Atlanta, Ga.; University of Virginia, Charlottesville, 1888; aged 47; a Fellow of the American Medical Association and formerly president of the Medical Association of Georgia and Atlanta Medical Society; professor of dermatology in Atlanta Medical College; dermatologist to the Grady Hospital, Atlanta Hospital and Hospital for Nervous Diseases; formerly president of the board of health of Atlanta; a dermatologist of international reputation; died in a hospital in Atlanta, March 14, three days after a surgical operation.

William Hamilton Campbell, M.D., Norwood, Cincinnati; Miami Medical College, Cincinnati, 1891; aged 54; a Fellow of the American Medical Association and American Academy of Ophthalmology and Oto-Laryngology; a well-known specialist on diseases of the eye, ear, nose and throat; ophthalmologist and formerly president of the staff of Speer's Memorial Hospital, Dayton, Ky.; who went to California early in March to join his wife; died in Los Angeles from pneumonia, March 16.

Mary M. Strong, M.D., Omaha; University of Michigan, Ann Arbor, 1888; aged 61; formerly a Fellow of the American Medical Association; said to have been the first woman to practice medicine in Nebraska; a professor of operative and clinical obstetrics in the John A. Creighton Medical College, Omaha; attending physician to the Salvation Army Rescue Home; obstetrician to Douglas County Hospital; died at her home in Omaha, March 21, from heart disease.

William Jayne, M.D., Springfield, Ill.; Missouri Medical College, St. Louis, 1840; aged 99; formerly territorial governor of the Dakotas; later mayor of Springfield, Ill., state senator from Sangamon County, and prominently identified with the banking interests of Springfield; at one time a member of the State Board of Charities; died at his home, March 20, from the effects of injuries received in a fall on an icy sidewalk in Springfield, in January last.

Carlos E. Husk, M.D., Shabbona, Ill.; College of Physicians and Surgeons, Chicago, 1898; aged 42; formerly a practitioner of Santa Barbara, Chihuahua, Mexico; a member of the expedition sent by Mount Sinai Hospital, New York City, to investigate typhus fever; was seized with the disease at Nuevo Laredo, Mexico, and died, March 20, in Laredo, Texas.

Warren Jones Copeland, Ocoee, Tenn. (license, Tennessee, 1889); aged 80; a Fellow of the American Medical Associa-

tion; for fifty-six years a practitioner and druggist of Polk County, Tenn.; surgeon in the Confederate Service throughout the Civil War; for two years thereafter a member of the Tennessee legislature and later county superintendent of public instruction; died at his home at Cookston Creek, March 16, from heart disease.

William Palmer Bolles, M.D., Roxbury, Boston; Harvard Medical School, 1871; aged 70; a member of the Massachusetts Medical Society; for many years identified with the Massachusetts College of Pharmacy; for a quarter of a century a member of the staff of the Boston City Hospital and consulting surgeon at the institution at the time of his death; died at his winter home in Santa Barbara, Calif., March 18, from heart disease.

Thomas David Baird, M.D., Walsenburg, Colo.; Rush Medical College, 1877; aged 62; a Fellow of the American Medical Association; mayor of Walsenburg; president of the city school board and Huerfano County School Board; from 1904 to 1910 regent of the state university; died at his home, March 14, from cerebral hemorrhage, after an illness of four years.

Charles Martin Campbell, M.D., Paterson, N. J.; Bellevue Hospital Medical College, 1894; aged 58; a Fellow of the American Medical Association and a member of the staff of the out-door department of St. Joseph's Hospital, Paterson; for two terms a member of the Paterson Board of Education; died at his home, March 19, from disease of the kidney.

Edmund Randolph Peaslee Fourtin, M.D., Waltham, Mass.; Harvard Medical School, 1891; aged 49; a member of the Massachusetts Medical Society; for a time a member of the staff of the Tewksbury and Foxboro state hospitals; died suddenly in Waltham, March 15, from heart disease, while making a professional call.

John K. Van Arsdale, M.D., Louisville, Ky.; University of Louisville, Ky., 1875; aged 68; for a quarter of a century a practitioner of Lincoln and Boyle counties, Ky., and later in the employ of the Louisville *Courier Journal;* died at the home of his son in New Albany, Ind., March 11, from pneumonia.

Hamilton S. McMaster, M.D., Dowagiac, Mich.; Bennett Medical College, Chicago, 1871; aged 74; a veteran of the Civil War; first city physician of Dowagiac; a trustee and director of the city schools and a member of the city council; died at his home, March 13, from heart disease.

William Harrison Pickels, M.D., El Paso, Texas; Rush Medical College, 1899; aged 41; a Fellow of the American Medical Association; formerly coroner of Grundy County and president of the Grundy County (Ill.) Medical Society; died at his home, March 9, from tuberculosis.

James C. Blickensderfer, M.D., Denver; Washington University, St. Louis, 1877; aged 68; a member of the Colorado State Medical Society; for a time a member of the staff of the Denver County and St. Joseph's hospitals; died at his home, March 3, from angina pectoris.

Louis N. Barlow, M.D., Chicago; Northwestern University Medical School, 1885; aged 54; a Fellow of the American Medical Association; and founder of the Forest Beach Tuberculosis Sanatorium in Michigan; died at his home in Chicago, March 24, from erysipelas.

Theodore McL. Northrup, M.D., St. Pauls, N. C.; University of Maryland, Baltimore, 1897; aged 42; president of the Bank of St. Pauls and interested in other local civic enterprises; died in the Charlotte (N. C.) Sanatorium, March 13, from nephritis.

James E. Brown, M.D., McGregor, Texas; Tulane University, New Orleans, 1888; vice president of the First National Bank of McGregor; died at his home, March 12.

Lewis C. Shutt, M.D., Oliver, Ind., Eclectic Medical Institute, Cincinnati, 1889; aged 60; died in the Deaconess Hospital, St. Louis, March 17, from nephritis.

Marriages

JOHN CHRISTIAN DOCTER, M.D., Drummond, Mont., to Miss Evaro Montana Avery of Missoula, Mont., March 18.

WILLIAM THOMAS PARROTT, M.D., Kinston, N. C., to Miss Jeanette E. Johnson of Wagram, N. C., March 15.

JOHN VINCENT MACGOWAN, M.D., Cincinnati, to Miss Irene Huxell of Mount Auburn, Cincinnati, March 13.

Association News

THE SCIENTIFIC EXHIBIT AT THE DETROIT SESSION

A New System of Classification and Awards

For many reasons, liberal contributions to the Scientific Exhibit are certain at the coming session of the Association in Detroit. Several excellent exhibits have already been promised. The Committee on Scientific Exhibit desires to call attention to the following:

In the evolution of this important enterprise at the Annual Session, research exhibits have come more and more to be the dominant feature. This is as it should be and no doubt will continue to be. Naturally, institutions (universities, hospitals, etc.) have contributed the bulk of this work. This has rather tended to discourage effort on the part of societies and individuals not having college or hospital connections. Accordingly, this year the committee offers a plan of classification which should stimulate participation by individuals, especially practitioners, who constitute a large majority of the membership.

AWARDS

Awards will consist of medals, cash honorariums and Certificates of Honor, according to the relative merits of exhibits. Awards will be made after careful consideration of exhibits and with discrimination. It must constantly be remembered that the purpose of these awards is to recognize work of real merit as well as to stimulate initiative in planning scientific studies. Should the exhibits in a given group prove mediocre in quality or give little promise of future development, no awards will be made. After reading carefully the following classification, each exhibitor should determine under which heading it is desirable to have the exhibit entered and catalogued:

CLASSIFICATION OF EXHIBITS

I. INSTITUTION EXHIBITS:
1. Museum collections.
Gross specimens, anatomic and pathologic.
2. Scientific demonstrations of methods, and newer things in physiology, chemistry, pharmacology, pathology, etc.
3. Hospital exhibits.

II. RESEARCH EXHIBITS:
1. From institutions.
2. By individuals:
(*a*) Representing completed work.
(The purpose of this classification is to keep institutions from competing with individuals.)
(*b*) Exhibits showing work of promise only begun.
(Under this heading would come work for which the Committee on Awards might think advisable to give a cash honorarium to encourage completion and future presentation of the results in the Scientific Exhibit.)

III. EXHIBITS RELATING TO METHODS OF LABORATORY DIAGNOSIS.

IV. PUBLIC HEALTH EXHIBITS.
Under this division only those things are desired which are new and instructive, such as exhaustive sanitary surveys, ideal work done, methods of attaining greater efficiency, etc.

V. MEDICAL SOCIETY EXHIBITS:
1. Exhibits relating to clinical, statistical or scientific medicine—conducted under the auspices of a national, state or county medical association, or other medical organization of recognized standing.
2. Medical economics. These exhibits will relate to the business aspects of the profession; the doctor's social and sociologic relationships; his services for the public weal; they will show methods for our advancement as progressive physicians and make plain how the doctor's material welfare and happiness may be enhanced.

VI. PRACTITIONERS' EXHIBIT:
1. Exhibits by physicians having college or hospital connection.
2. Exhibits by practitioners without college or hospital affiliation.
The last named should appeal to a large number. It will give even the modest country practitioner a chance, and the Committee on Scientific Exhibit will expect persons entering this classification to display an originality which will excite comment and admiration.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE WINE OF CARDUI SUIT

The trial of the suits brought by John A. Patten and the Chattanooga Medicine Company, Chattanooga, Tenn., against the American Medical Association and the editor of THE JOURNAL began in the United States District Court before Judge Carpenter, March 21.

The attorneys appearing for John A. Patten and his company are Robert H. Williams, Chattanooga, Tenn.; Warwick M. Hough, St. Louis; Francis W. Walker, Chicago, and James A. Fowler, Knoxville, Tenn.; for the Association, F. J. Loesch, T. J. Scofield, Theodore Schmidt, Chicago; James B. Sizer, Chattanooga, Tenn.; Benjamin T. Waldo, New Orleans, and C. J. Scofield, Carthage, Ill.

After the jury had been impaneled, Francis W. Walker, representing the plaintiff, began his opening statement saying:

The first case in the order of trial is the case of John A. Patten against the American Medical Association and George H. Simmons, defendants. The second case is the case of John A. Patten and Z. C. Patten, Jr., doing business under the firm name (as a partnership) of Chattanooga Medicine Company, and wherein they are both involved and, as it is claimed by us, both libeled. The case grows out of an attack made in THE JOURNAL of the American Medical Association upon a medicinal product manufactured by the Chattanooga Medicine Company and known as Wine of Cardui.

CHARGES PHYSICIANS OPPOSE ALL PROPRIETARY MEDICINES

Mr. Walker said, among other things, that as the case goes along, in its ultimate analysis, it will be discovered that:

This is an attack by a centralized medical association on the line of prohibition of the use or manufacture of any proprietary medicine or of any patent medicine, no matter how efficacious it may be. I think you will see that the case will ultimately turn out to be a proposition to the effect, as they contend, that no man or woman shall take anything for his or her own ailments unless prescribed by a physician, and then the formula or contents of the medicine is to be kept a secret from the patient himself.

THE ASSOCIATION AS VIEWED BY WINE OF CARDUI LAWYERS

Mr. Walker then outlined his view of the organization of the American Medical Association, as follows:

The American Medical Association, one of the defendants in this case, is an organization which it is not necessary for me to go into to any great extent now beyond outlining it sufficiently so that you may carry in your mind an idea of what the defendant is. There was a time in its history when it was composed entirely of doctors and organized under a different plan than the existing plan which was developed in 1897 with some changes since then in the charter and which I think, in its present form and method, has been in existence since 1904. Those dates, however, will all be made plain to you as we proceed and as those questions arise.

It is sufficient now, for the purpose of my case, to outline what I expect to show in a general way so that you may have clearly before you the character of that organization as it was at the time the articles that are sued upon were published and printed in their Journal.

As I understand it, in the various states, there are organizations in the counties of the county or city medical associations and the state medical associations of the various states. Now the American Medical Association, or the managers of it, in some way have representatives in these various county and state organizations. The American Medical Association itself was organized, as I understand it, as a method to publish and continue a journal on the line of the ideas that existed in the then managing editor of THE JOURNAL, the defendant, George H. Simmons. It was supposedly in the control of a Board of Trustees, consisting of nine members. This is the method by which the business is run. You belong to your medical society in the locality where you live, or you are a member of the state medical society, your local society being back of you. Being a member of any one of those organizations, although you may or may not be a member of the American Medical Association, the local work and general work is done in the local society or organization. But, by the mere payment of the sum of $5 for a subscription for THE JOURNAL of the American Medical Association, you become by virtue of that fact, and that fact alone (that is, providing you are a member in good standing of your local organization), a member of the American Medical Association; it being simply a method, as far as that goes, to get subscribers to THE JOURNAL of the American Medical Association. If you are a member we will say of the county or state association, upon subscribing for this medical journal (being a member of that body in good standing) you become by that fact alone, a member of the American Medical Association. You may never, under that arrangement (as will be developed later), have any voice in the naming of delegates to their convention of delegates by which the trustees are elected. You may never have a word to say as to their policy and you may never, on the information you gain that you think shows their policy, from THE JOURNAL of the American Medical Association—as we understand it you may never get any idea of their policy except from that journal.

Now bear in mind that our proof will establish I take it, that all you have to do is to pay $5, if you belong to the local association, and then you are a member of the Ameritan Medical Association and probably without a voice of any kind or character in its management or control and with no control whatever over its finances, its publication or anything it may do or say—nor its walking delegate.

As I understand it, there are some 42,000 doctors who, by subscribing for THE JOURNAL and being members of their local organizations, become by reason of that fact alone, members of the American Medical Association. In addition to that there are subscribers to the extent of some 20,000 or more, yet they are not members of the American Medical Association, either by reason of the fact that they are not doctors (and I suppose that would be very few of the number) or by reason of the fact that they do not belong to the county organization or state organization. At any rate, that will be the extent probably of the publication of this journal. It will be established in this case that there are about 160,000 or between 150,000 and 160,000 doctors in practice in the United States; so that when you take the membership of the American Medical Association, you have somewhere about one fourth or it may be a little over one fourth, but somewhere near one fourth of the doctors of the country who are members in the Association.

WINE OF CARDUI—THE WOMAN'S TONIC

Speaking of Wine of Cardui, Mr. Walker said:

The medicine in this case is what is known as Wine of Cardui and the question involved is whether that medicine, which is sold on the market as a woman's tonic, a uterine tonic, a medicine for which claims are made as a remedy for the difficulties which women alone have, has therapeutic value or not. It is for those diseases or disturbances that are peculiar to the organs of generation in a woman; those that have particularly to do with those periods which occur monthly, the menstrual period, when they suffer the most intense agony, a condition that in the medical world is known as dysmenorrhea; the condition of flooding, when they have excessive difficulty in all directions as well as a profuse bleeding, called menorrhagia; and then the lack of flow caused either by illness or lack of tone or a run down condition known as amenorrhea, when there is a scarcity and the agony that follows. All those conditions or pains that women suffer and that we men don't even comprehend or understand—this is a tonic and a medicine used for those purposes.

HISTORY OF CHATTANOOGA MEDICINE COMPANY AS OUTLINED BY MR. WALKER

Now some years ago (and I will say this so that you may keep it in mind)—Mr. John A. Patten grew up in this business. The concern was originally owned by his uncle, Z. C. Patten,—but from a youth almost he has developed with this business and he can tell you all about it. In 1906 the elder Mr. Patten who had been the former owner of the business, retired from this business and the Chattanooga Medicine Company became the property of Mr. John A. Patten and his brother Z. C. Patten [Jr.] and they continued the business and are in the manufacture of the medicine today. Long before the publication of this article in THE JOURNAL, there was published (not to be sent out except on inquiry) a book for women, or rather more of a pamphlet, called the Home Treatment Book, which made as the years went along and as medicine progressed, different statements as to the efficacy of the remedy—whether you could call them exaggerations or mere boosting—made more before Mr. Patten got hold of it than it has since. Those books, known as Home Treatment Books, are not books that are distributed promiscuously, or that accompany the medicine or that are within the package, but they are only sent out on request. If anybody asks for a book—and it will all be in evidence here, the evidence will develop all that—it is sent to them and that is where the statements in reference to both of these articles are made and they have reference to statements not in the Home Treatment Book that was in use or sent out on request at the time the articles were printed, but to statements as to what was claimed in the Home Treatment Book 10 or 15 years before the publication of these articles and long before John A. Patten and Z. C. Patten [Jr.] had in any way acquired ownership or control of the business.

These books will be presented to you, not in any garbled condition with a cut-out here and there, but in their entirety within the limits that the court puts on them at the time—that the books that were used at the time the articles came out and you will see as I take it, as we expect to establish, that there is nothing in there that should not be prescribed.

Mr. Walker declared that the evidence by witnesses for the plaintiff "will show on expert testimony alone that there is a divided opinion among the experts themselves as to the efficacy or non-efficacy of the remedy." He said, further:

We expect to take the position that where there is a divided opinion of the doctors or that the efficacy of a remedy is in the realm of opinion, then nobody can charge it with being fraudulent, nor can anybody charge that it is manufactured by a man with a fraudulent and deceitful intent.

The second phase of this case, as it is developed on the evidence, will be established by the women who have used this medicine for their

own ailments over a period of time necessary to relieve them. Woman after woman in the depositions that we have taken, will be presented to you and they will testify as to the actual effect of the medicine upon them and upon their condition.

In referring to the articles which have appeared in THE JOURNAL concerning Wine of Cardui, Mr. Walker said:

It will be established in this case that when Mr. John A. Patten took charge of this medicine company in 1906, and before any food and drug act went into effect, or was introduced, he took this medicine to one of the greatest chemists (now dead) in the United States for the purpose of ascertaining whether or not any other solvent or preservative could be used rather than alcohol for the preservation of the drug; that he experimented to eliminate all the alcohol possible from the drug. He found that by the use of a certain amount of alcohol, much less than had been in use before, the drug itself would spoil and the medicine had to be thrown away. He found that twenty per cent. of alcohol was the exact amount that would answer the purposes and that anything substantially beneath that amount would make the medicine spoil, and would no longer act either as a solvent or a preservative. Long before the Food and Drug Act was passed (I think a year or more before) he did that, and the article in THE JOURNAL of the American Medical Association says he did all that because of the Food and Drug Act.

Lastly, Mr. Walker said:

You will find, I take it, that there is not the faintest possible justification either for the abusive attack on Mr. Patten or on the remedy manufactured by the Chattanooga Medicine Company.

THE ASSOCIATION'S ATTORNEY STATES THE CASE

Mr. T. J. Scofield, representing the American Medical Association said, in opening his address:

You have heard something said about the American Medical Association. You have heard disrespectful comment and assertion laid to the door of one of the noblest professions that exists in this or in any other country. You have heard it said that its instruments and its principal men constitute a monopoly and a trust; that they are opposed to self medication; that they are opposed to all kinds of proprietary medicines, and that the only thing which they have in view is to prevent the people who use medicines and need medicines from buying proprietary medicines and patent medicines in order, forsooth, that they may call on you and obtain from you a fee for a prescription for medicine which they may prescribe.

Alluding to the statements of Mr. Walker regarding the American Medical Association, Mr. Scofield said:

What is the American Medical Association? Is it composed of unscientific men? Is it composed of uneducated men? Is it composed of men who are endeavoring simply for the purpose of profit to themselves, to obtain the privilege of prescribing for your family and mine? Not as I understand it.

There is no science that has developed more rapidly in the last fifty years, more earnestly or more successfully than the science of medicine. Today there are as members of the American Medical Association some 70,000 reputable, upright men who are practicing medicine, two-thirds of whose life is spent in the sick room endeavoring to minister to the wants of those who suffer, understandingly and knowingly—who spend two-thirds of their entire life where there is suffering and where there is sorrow—and that they may be of benefit to you they are studying and studying and studying. That these men may be more efficient, that their services may be of greater avail and purpose, 70,000 of them have associated themselves together in an organization that is known as the American Medical Association. It does not seem to me—the purpose and the object considered—that it is a disgrace to belong to that body of men, but it seems to me that it is an honor.

But it is said by Mr. Walker, in telling you what the evidence in this case would develop—and I therefore assume that he was sincere with you—that the only requisite to membership in the American Medical Association was in effect to pay $5.00 and become a subscriber to THE JOURNAL of the American Medical Association.

What is THE JOURNAL of the American Medical Association? It is the official organ of these 70,000 doctors, through whose columns there is interchange of experience and discovery and of thought that may be of benefit to the other 70,000 doctors and not only to the other 70,000, but to every doctor in the United States of America who may see fit to join or may determine by subscription to learn the lesson that that JOURNAL is intended to convey and is teaching week by week.

How is the American Medical Association made up? Is it made up of a large number of subscribers for THE JOURNAL? Not at all, and the evidence will not show that. But the evidence will rather show that this body may be likened in its organization to the organization of a county under the laws of a state, and the organization of a state under the laws of the United States—a representative body; a representative government. Men who live in the county, pay their taxes and own their property, are citizens of the state. Citizens of the state are, by reason of that fact, not only citizens of the state, but citizens of the United States. And so it is with the American Medical Association.

Now, then, gentlemen, there is no initiation fee that is required of gentlemen who are practicing physicians who desire to associate themselves with the American Medical Association, whatever. The only fee requirement is that you pay your dues to your County Society which you have got to maintain and keep up, and maintain yourself in good standing in your County and in your State Society as doctors, and when you do that, *ipso facto* you are a member of the American Medical Association.

Now I am dealing in detail here by reason of the fact that misapprehensions undoubtedly are left in your minds as to the organization of this body. There is what is known as a Fellowship in the American Medical Association which is composed of a large number of physicians, whether they be surgeons or doctors of medicine who desire to take part in the progress of scientific research and discovery, who are admitted to what is known as a Fellowship in the American Medical Association, and every man who is willing to pay his part of that expense thus entailed pays $5 for his Fellowship membership each and every year, and out of that the JOURNAL of the American Medical Association is maintained, $4 of it being turned over for the maintenance of the investigations and the scientific research that that JOURNAL through the American Medical Association, is conducting and the other dollar for purposes of the general expenses of the institution. Quite a different story.

And I say to you again: Just why it is that counsel would belittle the American Medical Association as a body, in the interest of the client whom he represents here today, is beyond my conception and understanding. It is my purpose, therefore, to deal frankly and fairly and honestly in telling you what I think the evidence will develop, if the subject is gone into, and my understanding is that what I have said to you is the plan on which the American Medical Association is organized and operates. And right here let me pause long enough to say that instead of the American Medical Association being opposed to all patent and proprietary medicines, on the contrary, the American Medical Association recognizes certain ethical proprietary medicines as being medicines of value, and recommend them, and physicians in this country prescribe them.

Continuing, Mr. Scofield said that there are two bodies represented in this litigation:

One the American Medical Association and some of its officers; the other the Chattanooga Medicine Company and its owners and proprietors. John A. Patten is not a doctor and never was. He is not abreast of the science of medicine and knows not a medicine that is appropriate to be prescribed to you or given to you. His brother, Z. C. Patten, who is associated with him in this business, is not a physician and never was a physician. His advertising agent, who sits yonder, is not a physician and never was a physician; but the evidence in this case will show you that he writes the medical lore and literature that Mr. Patten and his brother send broadcast all over this country as to this nostrum which they are pleased to designate a medicine under the name of Wine of Cardui. I call your attention to that fact, gentlemen, as showing you that so far as this medicine is concerned, it does not emanate from any source that has a right to diagnose disease, determine the cause of a condition that may exist where you are ailing physically, or to treat it.

Mr. Scofield said further:

With full knowledge of the fact that at least one fifth or more than one fifth of every bottle of Wine of Cardui, prior to 1906, that Mr. Patten was putting out on the market, was pure alcohol, he was nevertheless satisfied that the business should continue with the representation to the purchasing public that it was positively non-intoxicating.

THE FOOD AND DRUGS ACT

Mr. Scofield pointed out that the evidence in this case would show that John A. Patten early in the year 1906, associated with his brother Z. C. Patten, Jr., became the sole owners of the Chattanooga Medicine Company; that at that time, in the winter of 1905 and 1906, there was pending before Congress a Pure Food Law which, if enacted, required every manufacturer of any article of drugs to put in black and white on the carton in which it was contained the amount of alcohol that that medicine or preparation carried. That law was passed on the 30th day of June, 1906, and it became operative on the first day of January, 1907, which was a year or more after Mr. Patten had placed upon the labels of the bottles the fact that they contained 20 per cent. of alcohol.

Mr. Scofield said that in the literature of the Chattanooga Medicine Company, as now conducted, and under its present management, they put out and have put out in circulation twenty millions of almanacs: "The Cardui," or the "Wine of Cardui Almanac;" the "Ladies Birthday Almanac," as it is called. And they are scattered in every drug store where they can be placed throughout the south, and may be found at the cross road stores in many of the mercantile establishments that are located in country locations in every state in the south. Continuing, he said:

The evidence will show that in every one of them it is stated that the "Home Treatment for Women," which is a very valuable book for ladies who have any sort of female trouble, can be had for the asking, and they urge in these advertisements, that anybody or everybody

who wants one of them shall send them a request for it, and they will receive it by return mail, and they say: "Lest you may have some serious female trouble that is working on you, buy a bottle of Wine of Cardui today, and be taking it while you are getting this book; price $1.00 a bottle. Or what is better, if you will buy 5 bottles, we will throw in a bottle. All orders cash; nobody trusted."

In referring to Mr. Patten's church connections, Mr. Scofield said:

I do not care whether he is the bishop of the Methodist Church; I do not care whether he is a high layman in the Methodist Church; I do not care whether he is at the head of the book committee of the Methodist Church, when any man tells you that in a case of prolapsed womb, chronically so, with its ligaments stretched until the womb is practically hanging out of the body—that Wine of Cardui, the miserable nostrum that we contend it is, and that we said it was in these articles, and say now, will pull that womb up into its natural position in the human body until it has reached its ascendency and there rests, is a matter of such absurdity that it would seem to me that common intelligence would deny the truth of such representations, and yet that is one of the representations which they (the plaintiffs) make.

Mr. Scofield said that the evidence would show that Wine of Cardui was advertised for practically every ill that woman is heir to, by reason of the fact that she is a woman, and which may originate in her pelvic cavity, and that "Wine of Cardui will cure or reproduce in its virgin condition in effect a hanging breast." The defendants would be able to show by chemical analyses that have been made that Wine of Cardui contains no ingredient which has an effect upon the human uterus.

PLAINTIFF'S TESTIMONY

At the conclusion of Mr. Scofield's remarks, the taking of testimony was begun. Dr. Alexander R. Craig, secretary of the American Medical Association, and Dr. Arthur J. Cramp, in charge of the Propaganda for Reform department, were called as witnesses by the plaintiff. They testified in regard to the circulation of THE JOURNAL, and identified the plaintiff's exhibits concerning certain issues of THE JOURNAL, as well as other publications.

JOHN A. PATTEN ON THE STAND

In the direct examination by Attorney Walker, for the plaintiff, John A. Patten testified, in part, as follows:

Q.—Now, in what business are you engaged, Mr. Patten? *A.*—I am so-called managing partner of the Chattanooga Medicine Company of Chattanooga, Tennessee.

Q.—And what is the Chattanooga Medicine Company? Is that a firm or a corporation? *A.*—A firm. A co-partnership.

Q.—And who compose the firm? *A.*—My brother, Z. C. Patten, Jr., and myself.

Q.—And the firm is doing business under the name of the Chattanooga Medicine Company? *A.*—Yes.

Q.—Mr. Patten, do you know the medicine known as Wine of Cardui? *A.*—Yes.

Q.—Who is that manufactured by? *A.*—By the Chattanooga Medicine Company.

Q.—And was that being manufactured throughout the years 1914, 1915, and up to this date, 1916? *A.*—Yes.

Q.—And it was being manufactured was it, on August 11, 1914? *A.*—Yes, sir.

Q.—And on April 11, 1914? *A.*—Yes.

After testifying that the Chattanooga Medicine Company had been a partnership since Sept. 29, 1909, and stating that his attention was called to an article published in THE JOURNAL April 11, 1914, while he was in New York City, Mr. Patten on being cross-examined by Attorney T. J. Scofield, representing the defendants, testified as follows:

Q.—What is the business of the Chattanooga Medicine Company? *A.*—The manufacture and sale of three or four proprietary medicines.

Q.—What do you mean by a proprietary medicine? *A.*—Well, I mean a medicine in the first place that is not a common or official preparation in which there is a trade mark or special claim in the proprietor.

Q.—Do you mean by a proprietary medicine, such as the medicines which you manufacture, a secret formula medicine? *A.*—Well, it may be secret or it may be published.

Q.—Well, I am saying as you manufacture; what is that medicine, a secret formula medicine? *A.*—The formula is not published—no, sir.

Q.—You say there are some three or four proprietary medicines that you are interested in and that your company has manufactured? What are they, aside from Wine of Cardui? *A.*—Thedford's Black Draught, a liver medicine; Cardoseptic, used for a douche, an antiseptic preparation; and a syrup called Velvo.

Q.—Is Thedford's Black Draught a secret formula? *A.*—It is not published.

Q.—I am asking you whether or not it is a secret formula.

THE COURT:—Oh, is it known generally outside of your business, with people in the business of manufacturing medicines?

The Witness:—I desire to answer, you know, just as directly as I can. We do not publish the formula.

THE COURT:—Does anybody know it outside of your business?

A.—Well, it is pretty—pretty widely known, but we do not publish it; no.

Mr. T. J. Scofield:—Well, is the formula for Wine of Cardui pretty widely known? *A.*—I don't know.

Q.—You don't? *A.*—We don't publish it. It is secret as far as we are concerned.

Q.—As far as you are concerned? *A.*—Yes.

Q.—How about Cardoseptic; is that a secret formula? *A.*—Yes; though we give the formula to anybody who asks it; I think I have in some cases.

Q.—How about Velvo; is that a secret formula? *A.*—Yes. We make very little of it, but the formula has not been put on the wrapper nor published.

Q.—Are you connected with any other business that is engaged in the manufacture of patent or proprietary medicines of any character, whether for man or beast? *A.*—Yes. I am interested in a concern making preparations for, as you say, beasts.

Q.—Is that a secret formula? *A.*—Yes.

Q.—What is the name of the concern that manufactures that preparation? *A.*—The Bee Dee Stock Medicine Company.

Q.—Are there any other businesses with which you are connected that are engaged in the manufacture of proprietary medicine of any kind? *A.*—No, I think not.

Q.—You say you think not? Have you any interest in any other patent or proprietary medicines directly or indirectly? *A.*—Well, no, I —I don't think so. I am not actively, certainly—and I don't recall any interest in such a thing—no.

Q.—Then the only institutions that you remember are the Bee Dee Company and the Chattanooga Medicine Company with which you are associated in the manufacture of medicines, either for man or beast or woman; is that right? *A.*—Oh, I am interested in a little salve called Menthycoll.

Q.—Where is that manufactured? *A.*—It is manufactured at Chattanooga.

Q.—By the Chattanooga Medicine Company? *A.*—Well, my brother and I control it. It is made under the name of The Menthycoll Company.

Q.—Where is it made; at the plant of the Wine of Cardui Company or the Chattanooga Medicine Company? *A.*—Well, I don't know. It is made in the vicinity. I don't think it is. Very little of it is made, and I don't think it is made at the plant of the Chattanooga Medicine Company.

Q.—But in some other plant nearby? *A.*—Yes.

Q.—Is that a secret formula? *A.*—The formula is not on the package.

THE COURT:—Well, now, can't we arrive, at least, for the benefit of the Court, if not for the jury, at what is meant by a secret process or formula?

Mr. T. J. Scofield:—Well, a secret formula—

THE COURT:—If the formula is given out on application it cannot be legally or otherwise a secret formula.

Mr. T. J. Scofield:—No.

THE COURT:—Whether it is published on the wrapper or not.

Mr. T. J. Scofield:—No.

THE COURT:—Now, let us find out just what a secret formula is—

Mr. T. J. Scofield:—*Q.* Well, What is the formula of Wine of Cardui, Mr. Patten?

Mr. Walker:—That is objected to.

THE COURT:—What was the question?

Mr. Walker:—What is the formula?

Mr. T. J. Scofield:—Of Wine of Cardui.

THE COURT:—He has stated that is a secret process and was not given out and was not on the wrapper.

Mr. Walker:—That is what he said.

Mr. T. J. Scofield:—What is the formula of Cardoseptic?

Mr. Walker:—That is objected to.

Mr. T. J. Scofield:—I want to find out whether or not these are secret medicines.

Mr. Walker:—That will not answer the question of whether the formula is secret or not.

THE COURT:—This may be one of the medicines that he said was not secret.

Mr. T. J. Scofield:—I am trying to assist in ascertaining—your Honor asked the question as to what was a proprietary or secret formula medicine.

THE COURT:—Can you find that out by asking him what the formula is?

Mr. T. J. Scofield:—Is the formula of Cardoseptic maintained in secrecy by you, or is it given to the public?

Mr. Walker:—I object to it on the ground it is not material and it is not cross-examination.

THE COURT:—He may answer. (To which ruling of the Court the plaintiffs, by their counsel, then and there duly excepted.)

The Witness:—It is not on the label. I stated, in answer to your question, that we would have no objection to supplying it. I would supply it to anybody who asks for it; and I do not have it in my hand, but I will take pleasure in supplying it to you, Mr. Scofield.

Mr. T. J. Scofield:—Yes, well, I would like to have it.

At this point, an animated verbal warfare took place between counsel on both sides and the Court on the question of whether Mr. Patten should disclose the formula of Wine of Cardui, but the question was passed.

Attorney Walker then read excerpts from THE JOURNAL, April 11, 1914, entitled "Wine of Cardui"; also an article from THE JOURNAL of July 18, 1914. These articles were offered in evidence as plaintiff's Exhibits 1 and 2, as well as an article published in THE JOURNAL of June 6, 1914, entitled "An Explanation," plaintiff's exhibit No. 3, after which the further hearing of said case was adjourned until Monday, March 27.

COMPLETION OF THE PRESENTATION OF THE CASE FOR THE CHATTANOOGA MEDICINE COMPANY

On the morning of March 27, Dr. Arthur J. Cramp testified as to the distribution of reprints of the articles published in THE JOURNAL on Wine of Cardui.

Questions were also asked as to the publication of other medical journals in the United States.

Mr. John A. Patten was again called and testified as to his memberships on various committees of the Methodist Episcopal Church, stating:

"I was practically forced out of them by these publications and the campaign that followed."

Rev. John H. Race, clergyman of the Methodist Episcopal Church, one of the publishing agents of the Methodist Book Concern, testified on direct and on cross-examination as to Mr. Patten's membership in various committees also as to the duties of the Book Committee, Board of Education, Board of Managers, Methodist Brotherhood, the Layman's Association, and other organizations connected with the Methodist Episcopal Church. He further testified that Mr. Patten represented District No. 6 in the Book Committee, and that it is within the power of the Book Committee to fix the salaries of editors of the Advocates, the family church papers; to discontinue the services of any editor if it sees fit to do so on charges preferred and after trial.

Rev. Edgar Blake, minister of the Methodist Episcopal Church, residing in Evanston, Ill., Corresponding Secretary of the Board of Sunday Schools of the Methodist Episcopal Church, testified that the publication of the articles on Wine of Cardui was brought to the attention of the various members of the church, and that there was widespread discussion of the articles among them.

Introduction of the Case for the Association

Mr. Frank J. Loesch then read to the jury excerpts from the Constitution and By-Laws of the American Medical Association. He also read to the jury the entire articles published in THE JOURNAL on Wine of Cardui, attention being called to the specific portions read by Mr. Walker.

Mr. Scofield then introduced the deposition of Mrs. McElree:

DEPOSITION OF MRS. M'ELREE

After identification of the witness, Mr. T. J. Scofield asked:

Q.—Mrs. McElree, your husband, or your husband and yourself, formerly made a preparation known as Wine of Cardui, did you not? *A.*—Yes, sir.

Q.—Were you living then in Tennessee or Texas, or where? *A.*—We were living in West Tennessee.

Q.—West Tennessee? *A.*—In a small town, Arlington, out near Memphis.

Q.—Will you kindly tell the Commissioner how you made that preparation and out of what? *A.*—Well, my idea of that may be a little crude. I never helped to make it, and I was never in the laboratory. I was a very busy woman and I was never in the laboratory only for a few minutes at a time perhaps, but my understanding is, and I think I am correct, that he put the weed in a vessel and put water on it and let it stand perhaps two or three days to extract the medicinal properties, and then he drew it off and flavored it and put just enough whiskey in it to preserve it. That was all. I do not know the per cent., but it was just a small amount as could be used for the preservation of the medicine.

Q.—Now, what was the plant or the weed you say that was used? *A.*—Well, we did not know it any other way only as we got it, it was called Cardui.

Q.—Did it grow in the neighborhood in which you lived? *A.*—No, sir; it grew only where we planted it. It was not indigenous at all.

Q.—Where did you get the seed, Mrs. McElree? *A.*—Well, I got the seed from my grandmother in Fayetteville, Tennessee, middle Tennessee.

Q.—Did your grandmother tell you how to use the weed when it grew up so as to make this preparation from it? *A.*—Yes, sir; that was the only way I knew about it.

Q.—And did you communicate that intelligence to your husband so that in making it he could follow the directions which your grandmother gave? *A.*—Yes, sir. He did not know any other way to make it.

Q.—Do you know how much of the weed, as you designate it, or the Cardui, was used in making up the portion of the medicine? *A.*—Well, just on a small scale, the way grandmother gave it out to people that happened to need it, that she found out and she could get a little bunch of the weed—we used to say a little bunch that they could hold that way (indicating) to a quart of whiskey.

Mr. Hough:—Will you indicate what she means as the amount she could hold between her finger and the thumb, to a quart of whiskey?

Q.—To a quart of whiskey? *A.* Yes, sir; just a little bunch of the weed.

Q.—I think you said a quart of whiskey. You did not mean that? *A.*—I did not mean that, to a quart of medicine. They did not put only enough whiskey to preserve it and Mr. McElree, of course, began it on a small scale and he just put it in a barrel, and I think he put about two-thirds full of the weed after it was stripped and then he put the water on it and that extracted the properties of the weed and he filtered it.

Q.—Have you any recollection, Mrs. McElree, as to about when he would make a barrel of the preparation; you say he would fill the barrel about two-thirds full of the weed? *A.*—Yes, sir; about that.

Q.—And then put in water until the barrel—. *A.*—Was full.

Q.—Was full? *A.*—Yes, sir.

Q.—Would he then add whiskey to that, or would he wait until after it had been in the water for a few days and then take it off and add the whiskey? *A.*—I do not know, I could not tell you about that.

Q.—You do not know about that? *A.*—I do not know when he added the whiskey, I am not sure about that.

Q.—Will you kindly tell us, Mrs. McElree, whether or not in the medicine thus prepared, or the preparation thus made by your husband, there were any other ingredients than those you have just mentioned? *A.*—No, there was nothing else, but just a little coloring matter, just the weed.

Q.—What was the coloring matter? *A.*—It was cochineal.

Q.—Cochineal? *A.*—Yes, sir.

Q.—As it was prepared by your husband, as I understand it, it was composed of water, the Cardui or weed, as you designate it, enough whiskey to preserve it, the preparation, and a little cochineal coloring? *A.*—Yes, sir.

Q.—That was all that was contained in the preparation. *A.*—Yes, sir.

Q.—You do not know the amount, of course, as I take it, or the proportion or amount of whiskey that was put in? *A.*—No, I do not know the per cent. at all.

Q.—Was there enough whiskey put into the medicine so you could taste it and tell there was whiskey in it? *A.*—I do not know whether you could taste the whiskey, you might slightly, but I do not think I tasted it. I tasted the bitterest properties of the weed more than anything else. I do not remember that you could taste the whiskey at all. It might be said that you could taste it slightly, but I know there was not very much whiskey in it.

Q.—While Mr. McElree, your husband, and you were preparing this medicine you sold I suppose, did you, to people or give it to people as you saw fit? *A.*—Yes, sir; we began by just giving it to anyone that needed it, that we happened to know of.

Q.—Did you ever have the preparation patented at Washington? *A.*—We tried to have it patented, but my understanding is that they could not patent it.

Q.—Do you know why? *A.*—Because it was not a compound, is that the law, isn't it.

Q.—I guess so? *A.*—It was a proprietary medicine.

Q.—That is merely your understanding, that there was an application to patent, but for some reason it was not obtained? *A.*—That was the reason that was given me, that it was not a compound and could not be patented.

Q.—Do you remember, Mrs. McElree, whether the application for the patent was made in Mr. McElree's name? *A.*—Why, yes.

Q.—Then some time after that—. *A.*—That is my understanding. Of course, I never dreamed of anything else.

Q.—Do you remember, Mrs. McElree, it is quite likely you may not, because it was some years ago, do you remember what attorney it was that looked after the effort to patent the medicine, what lawyer looked after it for Mr. McElree? *A.*—No, I do not know.

Q.—How long did you and Mr. McElree continue to make the Wine of Cardui? *A.*—Well, I do not exactly know on that point.

Q.—About, approximately? *A.*—I can approximate it perhaps.

Q.—Just your best judgment, your best recollection? *A.*—I could not tell you definitely how many years. It was several years, however, but I do not know exactly the year we began, unless it was, I think may be '74 or '76, I am not sure about that.

Q.—In disposing of it I suppose your—you disposed of it locally, I presume, around in the neighborhood where you lived, or did you sell it all over the country? *A.*—Yes, sir; after Mr. McElree began to manufacture it he was advised by a very special friend, a physician, to get out of the schoolroom and to make this medicine instead of his

school work, on account of his health, and so he did finally, I think about a year after he began to talk about it, and he began to have orders from persons that knew of it, you know, it just advertised itself, and when the Chattanooga Medicine Company took it we had orders from sixteen different states.

Q.—Yes? A.—Yes, at our private laboratory.

Q.—Now, you put it I suppose, in sealing and filling these orders, in little bottles? A.—Just like the bottles we use now.

Q.—And it was called Wine of Cardui? A.—Yes, sir, McElree's Wine of Cardui.

Q.—And it was known as McElree's Wine of Cardui? A.—Yes, sir.

Q.—That was on the label, too? A.—Yes, sir.

Q.—And that continued to be on the label all the time you handled it and made it? A.—Yes, sir.

Q.—And the contents of the bottle during all the time you prepared it was made up of the ingredients which you have already detailed? A.—Just the same.

Q.—And of no others? A.—Just the same. There was nothing else in it while we had it.

Q.—Now, in speaking of the length of time you sold it yourself, and before the Chattanooga Medicine Company commenced to sell it, you cannot tell of course about the length of time, as I understand you, but approximately you say, would you say it was four, five, or six or eight or ten years? A.—No, it was not that long. Not over ten.

Q.—Two or three, do you think? A.—Well, it was longer than that. It was—I do not know exactly the year he began, and I cannot get an event that locates it to associate it with especially.

Q.—Would you think that it was two or three years or four? A.—Oh, yes; it was more than that. I expect it was four or five years.

Q.—Four or five years? A.—Well, you might say four anyhow.

Q.—You think you would be safe in saying four years? A.—I think I would.

Q.—So, that at the time then that you turned it over to the Chattanooga Medicine Company or Mr. Patten, and they commenced to manufacture what they called Wine of Cardui, you had established quite a reputation for it? A.—Yes, sir, a very good trade.

Q.—And as I understand, by that time its renown had become so great that you had orders from sixteen different states, at the time the Chattanooga Medicine Company or Mr. Patten took it over? A.—Yes, sir.

Q.—And you had been for some time enjoying a fairly good trade in sending it around to those different states on orders? A.—Yes, sir.

Q.—Now, would those orders be from druggists, drug stores, Mrs. McElree? A.—Some would, yes.

Q.—And some from physicians? A.—No, I do not know of any from physicians, but from private persons, private families.

Q.—And druggists? A.—Just family orders most of them, but we had some from druggists, I think.

Q.—Now, do you recall when it was that Mr. Patten or the Chattanooga Medicine Company as the case may be, commenced to manufacture Wine of Cardui or to manufacture what they called Wine of Cardui? A.—Well, I can approximate it I think.

Q.—About, yes, m'am. A.—We came to Texas in '81. Now, I am not much on dates.

Q.—Well, you just give your best recollection, that is all we want. A.—I never did keep them in mind much, but we came to Texas in '81 and the next summer after that we sold the royalty to Mr. Patten and he had sold the medicine before that, so I think it was in '79 or '80. '79 perhaps that they commenced to make the medicine, because they had been making it before we came to Texas, I think and I know we came in '81 and sold the royalties the next summer, it was in '82 to the best of my recollection, it was just a little over a year after we came to this state.

Q.—Now, when you sold the royalty, do you mean by that, Mrs. McElree, that you gave them the right to make the medicine according to your formula upon a payment to you of so much money a bottle? A.—Yes, sir.

Q.—That is what you mean by it? A.—Yes, sir, the royalty was some cents, I do not remember exactly, two and a half or three cents a bottle.

Q.—At the same time I suppose you continued to make it to some extent? A.—No, sir, we never made a bottle.

Q.—You turned it all over to them and they were to pay you? A.—Yes, sir, turned it over to them.

Q.—Did they have the exclusive right to manufacture it then? A.—So far as our interest in it was concerned they did. We had no control over the persons that had seed already, that got them from us before we began to manufacture, and that was never discussed at all. Those that raised the seed in their gardens at home continued to raise it and I suppose some do yet, but we never did raise any more.

Q.—Had you given the formula to some friends and others so as they could raise the weed and make it themselves, before that? A.—Well, I guess so, just like you would to a friend.

Q.—No, I say you probably had done that? A.—Yes, sir, just told them how to make it.

Q.—You probably gave them some of the seed to raise the plant? A.—Yes, sir, they did get the seed from us, but after that it was sold to the Company there was not any notice taken of that. It was in private families, one or two physicians raised it in their home gardens and continued to use it.

Q.—Do you remember, Mrs. McElree, how long they continued to pay you royalties until they finally paid you a gross sum of money instead of royalty, do you remember how long it was? A.—Just a very short time, just a few months.

Q.—Do you remember what the royalty was? A.—Not definitely. I think it was two and a half or three cents. I am not sure.

Q.—Per bottle? A.—Yes, sir.

Q.—What sized bottle? A.—Just the same as they now use for it.

Q.—The same as they now use, two and a half or three cents? A.—Yes, sir, I think so.

Q.—And after they had been paying that royalty to you for a few months they— A.—Yes, sir, it was a short time. I do not know whether it was even a quarter or not.

Q.—Then in lieu of the royalty to be paid in the future they paid you a certain amount of money? A.—Yes, sir.

Q.—Do you remember how much that was? A.—I never did know.

Q.—You do not know? A.—No, it was so little I reckon Mr. McElree was ashamed to tell me, and I really never did know what he got for the royalty.

Q.—You say it was little, you have an idea? A.—It was a very small sum. I know that.

Q.—In the manufacture of the medicine, Mrs. McElree, did you ever have to import any of the herb, or did you raise all you wanted? A.—No, sir. We raised all we used. That is, We—expected to raise it for the Company, but we did not do that but one season.

Q.—You did raise it for them one season, did you? A.—One season.

Q.—Do you know whether the herb is grown anywhere else now in this country? A.—Excepting those families?

Q.—That you gave it to? A.—Yes, sir.

Q.—In other words, you do not know whether it is raised in very large quantities? A.—Oh, no. No.

Q.—But just simply by such families, probably for family or neighborhood use? A.—Yes, sir, for family or neighborhood use, very limited use that way.

Q.—Now, Mrs. McElree, I wish to inquire, and I hope you won't think I am desiring to introduce or make inquiries concerning any delicate matters, but I consider it my duty and essential to this case to ask you to tell us what that medicine was intended to do? A.—Well I do not—I never knew it intended for anything but for suppression.

Q.—Of the menstrual flow? A.—The menstrual flow, yes, usually, in the beginning or from colds, something like that when it was interrupted.

Q.—So far as you were concerned that was the end you sold it and recommended it for? A.—Yes, sir.

Q.—And you did not sell it and recommend it for any other thing than that? A.—No, sir, I never knew it recommended for anything else.

Q.—Not by you? A.—Not by us, yes, sir.

Q.—And do you never recommend it to be taken by ladies who were pregnant, did you? A.—No, sir.

DIRECT EXAMINATION (CONTINUED)

By J. B. Sizer, Esq.

Q.—I want to ask Mrs. McElree, if you have, within the last few months, had a visit from any person representing the Chattanooga Medicine Company with reference to this litigation? A.—Yes, sir.

Q.—Who was that, please? A.—Dr. Cairns, I think.

Q.—Dr. C. J. Cairns? A.—Yes, sir, I suppose that is his initials.

Q.—He introduced himself as a Methodist minister, did not he? A.—No, I think I was introduced to him as Dr. Cairns, but I don't—

Q.—He had a letter of introduction did not he? A.—Yes, sir.

Q.—From whom? A.—Z. C. Patten.

Q.—Have you that letter with you? A.—Yes, sir, I have it in my possession.

Q.—Would mind producing it and letting the counsel on both sides see it? A.—Well, if it is not a breach to do it, I do not know that it would do any harm to either side.

Attorneys for the plaintiff submitted that the reading of the letter was not proper and the question was passed.

Mr. T. J. Scofield (continuing reading):

Q.—I will ask you then, to kindly produce that letter for the examination of counsel here, have you got it with you?

(The witness thereupon produces the letter.)

Q.—That is the letter, is it, Mrs. McElree, bearing date of March, 19, 1915? A.—Yes, sir, this is the letter.

Q.—Was that letter handed to you by Dr. Cairns? A.—Dr. Cairns, yes, sir.

Q.—You recognize Mr. Z. C. Patten's signature to that, do you? A.—Oh, very familiar.

The letter was then offered in evidence without further objection. It follows:

"'The Volunteer State Life Insurance Company,'
Chattanooga, Tennessee.
Z. C. Patten,
President.

March Nineteenth,
Nineteen-fifteen.

Mrs. R. L. McElree,
Dallas, Texas.

My Dear Mrs. McElree:

This will introduce to you Dr. J. G. Cairns, of this City. Jealous rivals in the medicine business—The American Medical Association—through their official journal published in Chicago, have made a vicious attack on McElree's Wine of Cardui."

Mr. Hough:—There is a pause after the American Medical Association.

Mr. T. J. Scofield:—Yes, there is a little dash. I can so indicate in reading.

Mr. Hough:—I think it will sound different.

THE COURT:—How did the witness indicate that when she gave her evidence?

Mr. T. J. Scofield:—I don't know, your Honor. This is a letter.

THE COURT:—Oh, that is a letter.

Mr. T. J. Scofield:—Yes. I don't know whether it is in the letter, or whether the stenographer—

THE COURT:—Oh, well; that is immaterial. Put the dash in.

Mr. T. J. Scofield—(Continuing reading):

"have made a vicious attack on McElree's Wine of Cardui, The Chattanooga Medicine Company, and particularly on my nephew, Mr. John A. Patten, who now has charge of the Chattanooga Medicine Company,—the object apparently being to ruin the reputation of McElree's Wine of Cardui, the originator of it, and everybody in any way connected with it. Our attorneys would like to get from you a statement of whatever you know about its discovery, either of your own knowledge or that you may remember having heard dear Dr. McElree say about it. Dr. Cairns calls on you for the purpose of getting this information. It is possible he may also wish to get from your daughter any information along these lines that she may have.

I trust you will be glad to give us the benefit of any knowledge you may have, and that you will talk freely with Dr. Cairns, who is worthy of all confidence.

With highest regards to yourself, and to your daughter, I remain,

Very cordially and sincerely yours,
Z. C. PATTEN (Signed)."

Q.—Have you in your possession, Mrs. McElree, a letter written to your husband by Mr. Patten some time in the year 1904 regarding this Wine of Cardui? *A.*—Yes, sir; I think I have. I do not remember about the date.

Q.—Will you kindly look through your correspondence and if you have such letter as described in the question, will you produce that also for examination of counsel and in order that it may be copied into this record?

Mr. Hough:—That is objected to, of course.

Mr. T. J. Scofield:—Shall I read that?

Mr. Hough:—Go ahead.

Mr. T. J. Scofield (continuing reading):

Q.—What did you say about the other letter, will you produce it? *A.*—I have a copy of it or a letter written in 1900, I believe.

Following a legal discussion a letter of Z. C. Patten, dated Dec. 27, 1904, was not admitted to the jury. Mr. Scofield then continued reading:

Q.—What was the name of your grandmother and your grandfather, I forgot which you said from whom you received the seed of this herb originally? *A.*—You mean her given name?

Q.—Yes, and the surname, both? *A.*—Full name, what do you want, both grandfather and grandmother, both, or just one?

Q.—The person from whom you received the seed? *A.*—I received it from my grandmother, her name was Francis. Francis Smith.

Q.—And her husband's name was what? *A.*—Francis Smith, they were both named Francis.

Q.—Where did they live? *A.*—Fayetteville, Tennessee.

Q.—Was it before or after your marriage to Dr. McElree that they gave you that seed? *A.*—After our marriage, when we were leaving home.

Q.—Now, can you remember the year you were married? *A.*—I suppose I can.

Q.—What year was that, please? *A.*—'58.

Q.—1858. So that it was in 1858 that you first got the seed? *A.*—Well, no, it was later than that, it was in the winter of 1860 I left home.

Q.—And did you and Dr. McElree commence to cultivate that seed and make this medicine immediately after you got the seed? *A.*—No, sir, we never dreamed of such a thing for the longest time.

Q.—It was a good many years after that then, before you commenced to make it? *A.*—It was down in '74 or '76, I am not sure which.

Q.—How did you happen to get acquainted with Mr. Z. C. Patten, and how was it that the negotiations commenced leading up to the sale of the formula to him? *A.*—I do not—I am not sure how Mr. McElree first knew them.

Q.—I believe you say that you and Mr. McElree lived at Arlington, which is a suburb of Memphis, is it not? *A.*—No, it is about 28 miles out of Memphis.

Q.—Did Mr. Patten come over to see you and your husband? *A.*—No, it was all correspondence. Mr. McElree went up there finally. I do not know when he went up there, I do not remember when he went up there, except Mr. Cunningham came to see him and wanted him to go to see Mr. Patten or the Chattanooga Medicine Company in order to put the medicine in their hands, in order that it might be distributed more readily and rapidly.

Q.—Who was Mr. Cunningham? *A.*—He was living at Cartersville, I think, in Georgia. He was editor of the *Confederate Veteran* at the time. He had his own press and was to do the advertising and went into partnership with Mr. McElree, and as soon as they had established that he forthwith wanted to go and put it into the hands of the Chattanooga Medicine Company. I do not know now for certain whether that was Mr. McElree's first knowledge of Mr. Patten or not.

Q.—You say you and Mr. McElree went? *A.*—No, I did not. Mr. McElree went with Mr. Cunningham to Chattanooga.

Q.—To Chattanooga? *A.*—Yes, sir.

Q.—The trade was closed there according to your recollection? *A.*—Yes, sir.

Q.—You say Mr. Cunningham was interested with Mr. McElree in the manufacture of this article? *A.*—Yes, sir, I think to share with him. I do not know. I am not sure about the per cent. of the proceeds, but he was to share with him for the use of the—for advertising the medicine.

Q.—Mr. Cunningham was to do the advertising and Mr. McElree the making of the medicine? *A.*—Yes, sir.

Q.—Was anyone else interested with your husband besides Mr. Cunningham in the manufacture of the medicine, or the sale of it? *A.*—No, there was nobody else ever with him in the manufacture of it.

Q.—Was there a man named Douglas, that was connected with him at any time? *A.*—No, sir.

Q.—Now do you remember whether or not it was after Mr. Cunningham became associated with your husband in the manufacture and sale of this medicine that an effort was made to patent it? *A.*—No, it was done before he sold it to the Chattanooga Medicine Company.

Q.—I know, but was Mr. Cunningham connected with your husband at that time? *A.*—No, not at that time. I think it was later.

Q.—Your recollection is then, that the application for the patent was made before Mr. Cunningham became connected with the sale of the medicine? *A.*—Yes, sir, before we knew anything of him."

Mr. Scofield:—Cross-examination.

The cross-examination of the witness was thereupon read by Mr. Hough: *"Cross-Examination."*

Q.—Mrs. McElree, you say you first heard about these seeds out of which the Wine of Cardui was made from your grandmother? *A.*—Yes, sir.

Q.—And that was after your marriage? *A.*—Oh, I knew about it ever since I can remember, but she gave me the seeds when I was leaving home, she thought it was so valuable a medicine that she said she did not want me to get out of it and to always keep it and if I never used it in my family I would find a plenty more of people that would need it. She was, I guess, a humanitarian.

Q.—Did you ever see her make any medicine from those seeds before you were married? *A.*—Yes, sir.

Q.—Did you live with her for any length of time? *A.*—I just stayed with her and went to school. I was there just through the schooldays. I went out home during the week end. I did not live with her only during my schooldays.

Q.—You mean only during your schooldays? *A.*—During the schooldays.

Q.—Do you know where your grandmother got the seeds from, or where she got the medicine from? *A.*—Yes, sir, my grandfather got them from a Cherokee Indian Doctor.

Q.—Do you know in what year? *A.*—No, sir, I do not It was when they were emigrating from Mississippi and Alabama, going up to the territory. I suppose it was while they were camped out in the suburb of our town.

Q.—Do you know the circumstances under which your grandfather got it from the Indian doctor? *A.*—I do not know any particulars, no minutia about it only he said he got the seed and told him about the use they used it for.

Q.—What did they say they used it for? *A.*—Just what I told you, and the usual—

Q.—You mean for the menstruation? *A.*—For menstruation, yes, sir.

Q.—For female troubles? *A.*—Yes, I expect that. Purely as a female remedy.

Q.—Do you know of its ever having been used with any woman who had any trouble of that kind? *A.*—Yes, sir.

Q.—What was the trouble? *A.*—Well, I do not know very definitely. I never inquired into such things, only just casually hearing of it spoken of, that it was delayed menstruation was one case I knew and then I knew of another that had suppression and was a very bad case. I have known of two or three of that kind, if not more.

Q.—You mean cases in which this medicine was given to correct that condition? *A.*—Yes, sir, and did correct it.

Q.—And did correct it? *A.*—Yes, sir. We know of just many cases in grandmother's—I have heard them speak of it just incidentally, about them coming there and getting the medicines from other towns and villages around, and the doctors there used it, used to send patients to grandmother to get the remedy. They never made it themselves, the doctors never used it but they would send them to her home to get it.

Q.—It was a common neighborhood remedy then you would call it? *A.*—Yes, sir.

Q.—For those conditions? *A.*—Yes, sir.

Q.—Do you know of any cases of young girls coming into womanhood who would use it? *A.*—Well, yes, sir, those were the kind I was speaking of.

Q.—Oh, I see. *A.*—Just then. Yes, sir.

Q.—Was the medicine always made with whiskey or alcohol or was it ever used in the form of a tea? A.—We never did but my sister who lived in Memphis at the time we made it, she kept it there and sold it and she found some ladies whose stomachs would not take alcohol at all, and whiskey, and she made tea and used it successfully without the whiskey, just as good as it was with it, and I expect better.

Q.—What was your sister's name? A.—Mrs. Rogers, Mrs. Samuel Rogers.

Q.—Is she still living? A.—No, she nor her husband neither are living.

Q.—Is your husband living? A.—No, sir.

Q.—When did he die? A.—In 1906, October, 1906.

Q.—Do you recollect the name of the physician who advised Dr. McElree to quit teaching school and go into the business of making this for humanity, as you stated? A.—Yes, Dr. Maddox.

Q.—Is he living or dead? A.—I do not know, I am not sure, but he may be living somewhere in Texas. He came out to Texas after we did, but I do not remember the town he lived in. Pottsville, I believe it is, I do not know whether that is the town or not, but he was the president of the medical board in Memphis at the time. He was a very able man. He was fine in his profession and he was a very safe adviser and he insisted on Mr. McElree making the Wine.

Q.—Do you know whether he ever used it in his practice? A.—Well, I cannot say positively but I think he did. I think that is the way he knew about whether to advise him to make it or not.

Q.—Meaning your husband? A.—Yes, sir, and I say, Dr. Maddox used it and introduced it, or he would not have advised Mr. McElree to make it.

Q.—You say that the plant was soaked in water first? A.—Yes, sir, I think so. I do not know whether Mr. McElree put the whiskey in before he filtered it or not, it may be that he did.

Q.—He may have soaked it in whiskey or alcohol, may be not? A.—Well, in connection with the water, he put water in there first to extract the medicinal qualities, and I suppose he may have put the alcohol in before he filtered it. Very likely he did. I do not know about that.

Q.—The purpose of putting it in, whatever it was, was to extract the medicinal qualities of the herb, whether it was water or water and whiskey, or water and alcohol, or whiskey or alcohol alone that was the purpose of it? A.—That was the purpose.

Q.—Do you know whether that water or whatever it was that was put in there was hot or cold? A.—It was cold, he never used any heat about it.

Q.—Do you know how long it was permitted to remain in that condition before he drew it off? A.—No, I do not think it was very long, may be two or three days, but I am not sure about that how long.

Q.—How long was your husband making this medicine before he got in touch with, did you say Mr. Cunningham, was it Dr. Cunningham? A.—I do not know whether he was a doctor or not.

Q.—Or Mr. Cunningham? A.—Just Mr. Cunningham. He had been making it some time, it was just before we went away to Texas that he came down and insisted on Mr. McElree going and making this deal with the Chattanooga Medicine Company and that just, may be a year or so before we went away. I am sure about that time, the length of time but I know we went away in '81, in the spring of '81.

Mr. Walker:—Isn't that "I am not sure about that length of time"?

Mr. Hough:—No, it says "I am sure." I think it must have meant "I am not sure," but it is written "I am sure." Isn't it.

Mr. T. J. Scofield:—It is written "I am sure," yes.

Mr. Hough:—(Continuing reading).

Q.—Did I understand you to say that you did not know just how much interest Mr. Cunningham had in the business? A.—No, I do not know the per cent. of his interest.

Q.—He was running the paper? A.—And he was doing the advertising.

Q.—He was to do the advertising? A.—Yes, sir, and to publish the journal.

Q.—To publish the journal? A.—Yes, sir.

Q.—About the medicine? A.—Yes, sir. Mr. McElree was to write it.

Q.—Who was to write it? A.—Mr. McElree.

Q.—And Mr. Cunningham was to publish it? A.—Publish it.

Q.—Mr. McElree was to grow the plant and make the medicine? A.—Yes, sir.

Q.—Do you know what that journal advertised the medicine as being good for. A.—No, sir, I do not.

Q.—Did you ever see a copy of it. A.—Yes, sir, I have seen a copy of it but I do not remember anything that was in it now. They did not get out but one or two journals before they made the trade with the Company, and then it was not edited any more. It was just begun, the editing of the journal, a very short time before we disposed of it.

Q.—Could you recollect that it was advertised as a woman's tonic? A.—No, I do not know that.

Q.—When Dr. McElree alone was interested it was known as a woman's tonic, wasn't it? A.—I do not know whether it was just put in that form exactly or not, I do not remember.

Q.—Do you know what the lettering was, or do you recall, on the labels of the bottles as they were put out by your husband before Mr. Cunningham was interested? A.—The label was never changed after he became interested, it was just the same.

Q.—The label continued the same after Mr. Cunningham became interested? A.—Yes, sir.

Q.—And then, you mean the label continued the same after the Chattanooga Medicine Company commenced to manufacture under a royalty contract. A.—Yes, sir. Well, perhaps I do not understand you quite there. They were not under a royalty contract, the Company was not at first. I think Mr. McElree wanted to sell him his royalty and they claimed that they were not able to buy it and did not consider the trade at all.

Q.—That is the company? A.—The company, but Mr. Patten bought it individually.

Q.—That is, Mr. Z. C. Patten? A.—Mr. Z. C. Patten bought the royalty individually.

Q.—As I understand you, the Chattanooga Medicine Company did not at first buy Mr. McElree out entirely? A.—No, sir.

Q.—But the Chattanooga Medicine Company made an arrangement with Mr. McElree and Mr. Cunningham under which the Chattanooga Medicine Company were to manufacture, advertise and sell it and pay Mr. Cunningham and your husband a royalty on what they sold? A.—Yes, sir.

Q.—At that time your husband was to furnish the seed? A.—No. He had already given permission, given them the seed and given them permission to raise it.

Q.—I thought you said in the beginning he furnished the seed and sold it to them? A.—He did when he sold it to them, he gave them the seed in order to raise it themselves, so that they might have full control of it.

Q.—Did he also continue to raise it and sell himself? A.—No, sir, he never did raise any more after the one season after they took charge of it. He raised the weed one season and he failed—why he raised so much more than he had ever used he thought he would have a plenty to reach to the next crop but it ran short.

Q.—That is, he could not raise enough to furnish the Chattanooga Medicine Company? A.—No, not in the quantity they needed.

Q.—And their sales grew so large that they needed more than he could furnish? A.—That is what it seemed, but they made it on so much larger scale.

Q.—While he was raising it and selling to the Chattanooga Medicine Company they were paying him in addition to the royalty for the seed and herb as he furnished? A.—For the herb they paid us so much a pound.

Q.—That is what I mean for the herb? A.—For the herb.

Q.—In addition to the royalty which they paid? A.—Yes, sir, that had nothing to do with royalty, the royalty was on the sale of the medicine after it was manufactured.

Q.—And the Chattanooga Medicine Company said they were not able to buy it outright but would manufacture on a royalty? A.—Yes, sir.

Q.—Then later Dr. McElree sold his royalty right to Z. C. Patten? A.—Yes, sir.

Q.—Do you recall about what year that was he sold the royalty right? A.—Yes, sir, I know what year that was. It was in '82.

Q.—'82? A.—Yes, sir.

Q.—And since then Dr. McElree has not had any other interest in it? A.—Nothing at all to do with it.

Q.—Did you ever know a man by the name of Blake? A.—Yes, sir.

Q.—Did he ever have an interest in it at any time? A.—Yes, sir. But I do not know to what extent his interest was. He went in with Mr. McElree, but he did not maintain that interest but for a short time.

Q.—Was that prior to the Cunningham connection? A.—Yes, sir, prior to the Chattanooga Medicine Company or the Cunningham either.

Q.—What ever that interest was Dr. McElree had bought him out before he had made an arrangement with Mr. Cunningham? A.—Yes, sir, their contract was made void before that.

Q.—Mrs. McElree, when did you first show these letters to any representative of the American Medical Association? A.—Why at my home a few weeks ago. I do not know.

Q.—Where? A.—At my home in Alvarado.

Q.—Who was the representative? A.—Dr. Heizer.

Q.—This is the gentleman sitting here? A.—Yes, sir, and we were looking over some old correspondence trying to find Mr. McElree's signature.

Q.—Did you know Dr. Heizer prior to that time? A.—No.

Q.—Who introduced him to you? A.—I think he was introduced through Dr. McCormack, or introduced himself, I do not remember.

Q.—Did he have a letter from Dr. McCormack? A.—No, sir.

Q.—Do you know Dr. McCormack? A.—No, only in a business way. Dr. McCormack came to see me first.

Q.—Before you saw Dr. Heizer? A.—Yes, sir.

Q.—Dr. McCormack came to see you, representing the medical association, too? A.—Yes, sir.

Q.—How long prior to the time that Dr. Heizer came? A.—It was two or three weeks perhaps, I do not think very long.

Q.—What did Dr. McCormack say to you? A.—He wanted to know the history of the medicine, its early history and the origin and the manufacture.

Q.—Did he tell you, Dr. McCormack, that Dr. Heizer would come later? A.—No, I think he said he would come back, when he had found himself prepared for the information he wanted to get from me and he would come back and ask me to answer these questions or answer some questions. He did not say what.

Q.—What did Dr. Heizer say to you when he came. A.—Well, he just asked me the same thing, about the origin and manufacture of

the medicine, the time that we had been making it, and things like that. I do not remember each question accurately, of course, but just on that same line.

Q.—For instance, how did you know that he was Dr. Heizer, was there any way to identify him? *A.*—No, sir.

Q.—He just introduced himself? *A.*—He just introduced himself.

Q.—And what did he say about himself? *A.*—He said he wanted to ask me in connection with the medicine, in the line Dr. McCormack had spoken to me about.

Q.—Did he tell you for whom it was? *A.*—The information.

Mr. Hough:—It should be an interrogation.

Mr. T. J. Scofield:—It should be an interrogation.

Mr. Hough:—(Continuing reading).

A.—The information?

Q.—Yes, that he was representing the defendants, in these suits that Mr. Patten had brought? *A.*—Well, he spoke of the suits being on hand. I did not know anything about it until they spoke of it. I never had heard of it, but he asked me about what the medicine was used for, what it was recommended for, and the per cent. of alcohol, things like that, and what it was recommended for, is the most I remember that was talked about at all.

Q.—Did you understand during that time that it was for use in the suits that Mr. Patten had brought against the American Medical Association? *A.*—I do not think I knew that definitely. I knew the suit had been spoken of and that they were on the other side but I did not put knowledge of it into connection with the Chattanooga Medicine Company especially. The reason I showed that letter of introduction it tells there what the American Medical Association was trying to do with Mr. Patten. I said if they were trying to do those things I reckon it was ignorance on my part to show it to him, to see if that was what the association was trying to establish, those things against Mr. McElree's character, and against the medicine and against the whole company I was getting at whether they were trying really pull down—

Mr. Hough:—I suppose "to" should have been there.

(Continuing reading) "pull down the character of the medicine and the men connected with it and Dr. Heizer seemed to think that he was mistaken about the object in the prosecution.

Q.—You say Mr. Heizer said Mr. Patten was mistaken in thinking that they were trying—— *A.*—Trying to hurt the men and injure them, that they were just getting at the truth, whether they were making a proper medicine.

Q.—Did they tell you they were not trying to hurt the Wine of Cardui people? *A.*—Yes, I think so, that they did not want to hurt Mr. Patten or anybody that they just wanted to get at the facts in the case.

Q.—Did Mr. McCormack make the same statement to you that they were not trying to hurt the medicine? *A.*—Well, he said they were not making the original medicine and were putting too much alcohol in it and went on to talk about the deleterious effects that it was having on people that were taking it in a general way.

Q.—You mean he told you they were not making the medicine uniform, as your husband made it and it was not as good a medicine as your husband made? *A.*—Yes, about that.

Q.—Did he say it was not as good as your husband made? *A.*—I do not think so.

Q.—Did Dr. Heizer say that? *A.*—He said he had witnesses to show that it was not like Mr. McElree made it.

Q.—Did he say it was better or worse? *A.*—He did not say, only it had more alcohol in it.

Q.—Than Dr. McElree put in? *A.*—Yes, sir.

Q.—How many visits did you have from Dr. McCormack, only the one? *A.*—Only the one.

Q.—And how many from Dr. Heizer? *A.*—Two.

Q.—What was the dates of those? *A.*—I do not know. His were not very far after Dr. McCormack's, it was in the spring.

Q.—You mean this last spring? *A.*—Yes, sir, a few weeks ago. I do not remember whether it was in March or April, along there somewhere. I did not keep up with the dates, I never did, and cannot do it.

Q.—Did Dr. Heizer make any promises of any kind to you? *A.*—No, sir.

Q.—He only said that the medicine was not being made as your husband made it. *A.*—The greatest objection either one offered to it was it was not the original medicine and it had more alcohol in it, and that people were using it to their detriment.

Q.—You mean because of the alcohol? *A.*—Yes, sir.

Q.—Did he say that people were taking it for the alcohol? *A.*—Yes, sir.

Q.—Both of them stated that to you? *A.*—I do not remember about Dr. Heizer—I mean Dr. McCormack. Dr. Heizer said that.

Q.—By what name did you know the plant, Mrs. McElree at the time you were manufacturing the medicine, at the time your husband was manufacturing the medicine? *A.*—We called it always just what my grandmother called it, and I suppose that is the name they got from the Indians.

Q.—What is the name that your grandmother called it? *A.*—She called Cardui I think, or Carduus, I think sometimes one and sometimes the other. I do not know, I think they called it Carduus altogether and Mr. McElree called it Cardui. I am not sure, I am not sure that grandmother called it Cardui. It was Carduus I know, the name on which the Cardui was based.

Q.—Have you been under Dr. Heizer's care as a physician recently? *A.*—Well, I do not know whether you would call it under his care. He examined me, the condition of my heart, yes, sir. He spoke to me about coming here or going to Alvarado and I said, "Well, I am not strong enough to go anywhere this hot weather," and I decided—I intended to come up here on a visit, but decided not to do so on account, I said, "My greatest trouble is aneurism, and I have to be careful about exerting my strength and conserving it, and he looked at it and examined my condition.

Q.—When was that, Mrs. McElree? *A.*—About a week or ten days ago. Ten or twelve days ago he came to see me about getting the deposition, and that was our conversation about where we should meet, and I spoke of coming over to Waxahachie, but I did not expect to be there that long and had decided not to come to Dallas, and he asked me if I could come over here or go to Alvarado or could come back to Waxahachie if I was in Alvarado and I said I could not go around in hot weather much anywhere.

Q.—When did he ask you that? *A.*—About ten days ago, ten or twelve, I guess now.

Q.—He was there at that time, was he? *A.*—Yes, sir.

Q.—Then after that when did you see him next? *A.*—He came out here yesterday evening.

Q.—He came out here yesterday evening? *A.*—Yes, sir.

Q.—Was he here this morning also before the rest of us came out? *A.*—I do not know. I thought you all came together. I do not know.

Q.—No, he did not come with us. Was he seeing you this morning as a physician or about these depositions? *A.*—Well, he did not say anything particularly about either one, only, of course, inquired about my condition, and that was all.

Q.—Does Dr. Heizer live in this neighborhood. *A.*—No, sir.

Q.—Where does he live? *A.*—I do not know.

Q.—How do you know he does not live in this neighborhood? *A.*—Well, I do not know. I do not know where he lives. I presumed that he lived in Kentucky, that was my impression.

Q.—What are his initials, Mrs. McElree? *A.*—I do not know.

Q.—But he is the Dr. Heizer of whom Dr. McCormack spoke? *A.*—Yes—Well, Dr. McCormack did not speak of him to me at all. He spoke of Dr. McCormack to me when he came. He did not—I do not know what he said now about Dr. McCormack. He spoke of Dr. McCormack having been here.

Q.—Do you feel certain that when he came he did not have a letter of introduction to you from Dr. McCormack? *A.*—No, I do not think he did.

Q.—Or anyone else? *A.*—No.

Q.—Let me see if I have received the right impression concerning some of the statements you made. I received the impression that Dr. Heizer, including Dr. McCormack, have made some statements to you with reference to Wine of Cardui which would cause you to have some feeling against the Pattens, or the Chattanooga Medicine Company because of their having changed the formula, as he said, is that correct?

Mr. T. J. Scofield:—There is an objection to that question, if the Court please. It is waived, go ahead.

Mr. Walker:—He waived it.

Mr. Hough:—(Continuing reading):

A.—Well, as far as speaking of the innovations in the manufacture of the medicine we did not let that affect us one way or the other especially. We just did not see it was right. It was new to us. We had not heard anything of it before and we never have yet. We do not know what changes they have made especially only that they asked about the per cent. of alcohol and I know Dr. McElree did not put enough alcohol in it to be deleterious to the health. He put just enough in it to save it.

Q.—Did they tell you or either of them tell you that you would have any interest in the matter if the Chattanooga Medicine Company or Mr. Patten had made any change? *A.*—Well, he said it was no longer McElree's Wine of Cardui, that was about all he said about it. They—if they had made innovations it was not McElree's Wine of Cardui.

Q.—Did they intimate that you would have any interest in the matter if that were a fact? *A.*—Well, he said that that would depend entirely upon our view of it, whether we wanted to have any.

Q.—He discussed that with you, did he? *A.*—Well, in an incidental way, that it was not the original.

Q.—What did he say you might do? *A.*—Well, I do not know, it seemed that he thought it would revert to us if that was true, if we wanted it to, if we chose.

Q.—He suggested that to you, did he? *A.*—Yes, sir. Just mentioned it incidentally. He did not suggest it, as a mode of procedure or anything like that.

Q.—That was while he was asking you if you would give the deposition for the defendants? *A.*—That was the first time I saw him, he was just asking about it. They had not said anything about the deposition then. He had spoken—it was the first time he came, and he was just speaking of the history of the medicine and whether it was the original medicine or not.

Q.—When your husband was manufacturing the medicine did he have a laboratory apart from the house, his residence? *A.*—Yes, sir.

Q.—How far from the house was it? *A.*—It was right in the—close to the house, right in the corner of the yard.

Q.—Have you any way of determining the percentage of alcohol which was in the medicine at the time your husband manufactured it, whether it was put in—"

Mr. Hough:—The "A" is there, but the answer is out here. (Continuing reading).

Q.—You have no way of determining it? A.—No, I have no way at all of determining that.

Q.—Did Mr. McElree have any assistant in the manufacture of the medicine, or did he do it all himself? A.—No, sir, he did it all himself.

Q.—How far from where he manufactured the medicine that the shrub or plant was growing? A.—Right in the same yard, right back of the yard, in the same lot.

Q.—In the same yard? A.—Yes, in the same lot, it was a large lot and the building was near the street and the medicine was in the back yard.

Q.—About how high did the plant grow before he cut it? A.—Well, it was different heights, according to the soil, generally the bunches would go about that high.

Mr. Sizer:—About eight inches, would you say? A.—Yes, about eight or ten inches. It was not a tall plant at all, a little bunched with heavy leaves.

Q.—Did it have to be replanted every year? A.—Yes, sir.

Q.—Did he ever pull it up at the roots? A.—He always pulled it up by the roots.

Q.—He always pulled it up by the roots, and then he would take the whole clean shrub and put it in this barrel? A.—No, he took the leaves off. I do not think he ever put the roots in. Did he? (Speaking to daughter):

Q.—Did he put the stem in? A.—Yes, sir.

Q.—He put everything in but the roots? A.—But the roots.

Q.—That is the flower and the stem, if there was a flower? A.—Yes, I think he cut it about the time it was beginning to flower.

Q.—How long since you have seen some of that growing? A.—It has been ever since I came to Texas, a year or two before, two or three, that was in '81. It is about thirty-five years, I guess, thirty-three or five.

Q.—Did you ever hear of that plant being called by other names than Carduus? A.—No, sir.

Q.—Who was Dr. Stewart? A.—He was a young practitioner that lived in our town at Arlington, lived there when we were making the medicine.

Q.—Do you know of his having used it? A.—Yes, sir, he used it extensively. He used it for his own wife.

Q.—For the condition you have referred to, for which it was advertised? A.—Well, no, it was flooding at the menstrual period.

Q.—At about what age was his wife? A.—She was young, maybe twenty-one or two years old.

Q.—Do you know what the results were of the use of the medicine by him? A.—It cured her and she is living today and a good strong woman. She used to be a very delicate woman.

Q.—Where does she live now? A.—I think she lives in Memphis, but I have forgotten her name. I think she was remarried.

Q.—A second time? A.—Yes, sir. Her maiden name was White. I do not remember the man that she married the second time.

Q.—Do you know whether Dr. McElree urged Mr. Z. C. Patten to buy his royalty right or whether Mr. Patten urged Dr. McElree to sell? A.—Mr. Patten and Mr. McElree exchanged several letters in regard to it and Mr. Patten advised Mr. McElree not to sell. He said he was not able to pay him what the medicine was worth, what the royalty was worth, and Mr. McElree I think he was in kind of a monetary strait, and he insisted I think on Mr. Patten the royalty.

Q.—And that led to the sale of the royalty right to Mr. Patten individually? A.—Yes, sir.

Q.—And not to the company? A.—Yes, sir.

Q.—Did you know a girl named Jane English? A.—Yes, sir.

Q.—Where did she live? A.—At Fayetteville, she was in school with me when I was a girl and boarded with my grandmother where I lived.

Q.—Did she have any female trouble? A.—Yes, sir.

Q.—Did she take Cardui for it? A.—Yes, sir.

Q.—What effect did it have on her? A.—It cured her.

Q.—At what age was she? A.—About sixteen.

Q.—Just coming into womanhood? A.—Yes, sir.

Q.—And that was the trouble? A.—Yes, sir.

Q.—That is, it was delayed? A.—Yes. Yes, they thought, well, they knew almost that was causing her bad health and she was going down. They were afraid she was very seriously sick, that she might have tuberculosis, and they gave her—grandmother gave her the Cardui and she got well, just as rosy and well as she could be.

Q.—Did your grandmother give her the Cardui as a tea, that is, with or without the whiskey? A.—She gave it to her with the whiskey, she never made the tea.

Q.—Your grandmother never made the tea? A.—No, sir.

Q.—It was other people who used the tea? A.—my sister in Memphis, after we began to manufacture was the only one, and after that, I do not know whether Mr. McElree told the company or not, but they used to put up the dry herb in packages, and some people used it that way, some put it in whiskey at home and some made tea of it, I do not know what the extent of it was.

Q.—Was the effect any different? A.—No, sir, the tea has the same effect as it does with the whiskey.

Mr. Hough:—I think that is all.

RE-DIRECT EXAMINATION

The re-direct examination was read by Mr. T. J. Scofield.

Mr. T. J. Scofield (reading):

Q.—Now what about this visit of Dr. McCormack's to you, Mrs. McElree, I believe you said when he first came to see you, you asked him about this letter that Mr. Patten had written to you, is that right? A.—No, sir.

Q.—Who was it? A.—I did not say anything to Dr. McCormack about it. I do not know whether I had it then or not. I believe I had met Dr. Cairns.

Q.—Who was it you spoke to about it, was it Dr. Heizer you asked about this letter? A.—No, I was talking about what the Medical Association were claiming against the medicine.

Q.—Yes. A.—I just happened to think of that letter and that Mr. Patten stated in that the objections, or the statements they had made against the company and I just went and got that, not thinking it would do any harm at all. I do not reckon it does.

Mr. Hough:—It does not.

A.—And just showed him in that what Mr. Patten said the Association was doing against the Company and I was surprised. I was surprised at some statements they made, but Dr. Heizer said Mr. Patten was mistaken in the attitude of the Medical Association towards the Company, they just wanted to get at the facts.

Q.—And in that connection, did Dr. Heizer especially say that it was not true that the Medical Association was making any attack on the originator of Wine of Cardui.

Mr. T. J. Scofield:—Then there is an objection by you, Mr. Hough.

Mr. Hough:—It doesn't make any difference whether you do or do not read it. Do whatever you choose.

Mr. T. J. Scofield (continuing reading):

A.—(Continuing) that the Association was not making any attacks on Mr. McElree.

Q.—Yes, on the originator of Wine of Cardui. What, if anything, now, did Dr. Heizer say with respect to that statement in Mr. Patten's letter? A.—Well, not anything specially on that, he said he thought he was mistaken in what he thought their attitude was towards the Chattanooga Medicine Company.

Q.—Yes, and he explained to you he simply wanted to get at the facts? A.—To get at the facts.

Q.—Especially, I believe you say he inquired what the percentage of alcohol in the Wine of Cardui as originally made was? A.—Yes, sir.

Q.—And you told him you could not tell that? A.—Yes, sir.

Q.—I want to ask you about a man named Blake to whom you referred in the course of your cross examination. What were his initials? A.—C.

Q.—Is he living now? A.—I do not know, he is a minister. He lived in Nashville.

Q.—The Rev. T. C. Blake of what denomination? A.—Presbyterian. If he is living now, he is very old. He was an old man when I was rather young myself, it may be he is not living. I am not sure.

Q.—With reference to the original source of this seed that your grandmother gave you; of course you only know from tradition or reputation in the family where it originally came from? A.—Yes, and I have no doubt about it.

Q.—Your grandmother told you that some Indian doctor had given—A.—Grandfather got it from a Cherokee Indian Doctor when they were emigrating to the territory.

Q.—Now I believe you have further said that that herb was not indigenous in this country? A.—No, I said our state. I do not know about anywhere else. I said it was not indigenous in our state.

Q.—In Tennessee you mean? A.—Yes, sir.

Q.—Where did this Indian doctor come from? A.—He came from Mississippi or Alabama, down in those settlements, you know, there were so many of them down there and the government moved them to the territory.

Q.—And the doctor brought that seed as you understand, along with him? A.—Yes, sir; had it along with him, taking it where he was to go.

Q.—Did you understand he had been cultivating the herb or gathered the seed from some wild herb? A.—He had been using it as a medicine.

Q.—Did he cultivate it and raise it, I mean, the herb, himself or simply gather it in the woods and field? A.—I do not know that. I never heard it discussed.

Q.—Did you make any statement to Dr. Cairns, any written or typewritten statement at the time he came to see you? A.—Yes, sir; he took quite a lot of questions and answers, answers that I gave.

Q.—Did you sign the statement, do you remember? A.—No, I do not think I did. I do not think he asked me to.

Q.—He just took down the statements that you gave him? A.—Yes, sir; I am not sure whether I signed it or not. I do not remember, if I did, but I do not think I did. I do not think he asked me to sign it.

Q.—I think you were asked some questions on cross-examination with respect to the medicine being made by the doctor from the seeds of this herb. As a matter of fact the seeds were not used in making the medicine, were they? A.—Oh, no.

Q.—You use simply the leaves and the stalk of the herb? A.—Yes, sir.

Mr. Sizer:—I think that is all.

Mr. T. J. Scofield:—That finishes it.

Whereupon an adjournment was taken until 10:30 a. m., Tuesday, March 28, 1916.

(*To be continued*)

Correspondence

Subacromial Bursitis — A Reply

To the Editor:—In reply to Dr. Brickner's communication (Correspondence, THE JOURNAL, March 18, 1916, p. 912) concerning my article on subdeltoid bursitis (THE JOURNAL, Jan. 22, 1916, p. 264), I find it necessary to clear up one or two points because Dr. Brickner has quoted only small fragments of my letter to him.

The matter of extirpation of the bursa is a mere play of words, for I used the term in the sense that it is usually employed by surgeons, i. e., removal of the diseased portion. I informed Dr. Brickner that I felt that our long incision and wide retraction gave sufficient exposure to have completely removed the bursa. Our operation extirpated the bursa in the ordinary sense of the term. Only microscopic dissection would completely extirpate a structure of this kind.

In regard to curetting off the inner wall of the bursa, I told Dr. Brickner that it was removed to see if there were any calcareous deposits underneath it in the supraspinatus tendon. According to his assertion the deposits are always found beneath this inner wall of the bursa, but instead, in this case, they were entirely in the outer wall. I may add also that the inner wall was removed with the idea of preventing a possible reformation of the bursa.

Concerning the contents of the bursa, Dr. Brickner unfortunately did not acknowledge that my letter informed him that the bursa contained a collection of serous fluid, and that there were no adhesions present between the walls.

In view of the operative findings, I cannot see how our interpretation of the roentgenogram can be questioned.

A copy of the roentgenogram taken after operation showing complete removal of the calcareous deposit was sent to Dr. Brickner.

I fear Dr. Brickner is also in error in regard to Wrede's statement, for that author says in his article (*Arch. f. klin. Chir.*, 1912, xcix, 267), speaking of the operation of Stieda and Bergmann: "Der Deltoides wird in der Faserrichtung stumpf durchtrennt und mit Haken auseinander gehalten. Durch Innenrotation des Arms erscheint der Schleimbeutel in der Wunde und wird extirpirt. Dies ist anatomisch unmöglich." ("The deltoid is divided bluntly in the direction of the muscle fibers and held open with retractors. By internal rotation of the arm, the bursa appears in the wound and is extirpated. This is anatomically impossible.")

Please note that I do not dispute Dr. Brickner's findings in any of his cases, but the definite facts present in my case are entirely sufficient to disprove absolutely his dogmatic conclusion that the calcareous deposits are always present beneath the bursa.

ALBERT H. MONTGOMERY, M.D., Chicago.

Electrotherapy in Lumbago

To the Editor:—A paragraph in the article on backache (THE JOURNAL, March 11, 1916, p. 814) has attracted my attention. It says, "Sometimes faradic electricity is of value in lumbago." I am surprised that THE JOURNAL has allowed such a statement to go without further explanation of what really is of value in electrotherapeutics. Such a statement belongs almost to the dark ages. If the writer knew his subject he would have mentioned the real things, such as static, high frequency currents, and the high candle power light and others.

WILLIAM MARTIN, M.D., Atlantic City, N. J.

[COMMENT.—The faradic current as commonly used has only a mechanical action when applied to the body, as it possesses for practical purposes no amperage, a low voltage, and a constantly changing polarity. It will cause contraction of the muscles, provided the lower motor neuron is intact. When one electrode is passed over the body, a slight stimulation of the peripheral circulation is produced, but no deep seated action or chemical change can be expected to take place in the tissue. As will be seen, the therapeutic value of this current is therefore slight, and as a pain reliever it has little, if any, value.

If electricity is to be employed in the treatment of lumbago, the constant or galvanic current will be more apt to relieve the pain because the pole of the current is constant and it has sufficient amperage to bring about chemical change. If, in using the galvanic current, the positive pole is saturated with a 10 per cent. solution of cocain, and placed over the painful area, the negative electrode being placed at some indifferent part of the body and a current of from 5 to 20 milliamperes, depending on the tolerance of the pain, is applied for from ten to twenty minutes, relief of pain occurs in many cases. So far as has been determined, cocain used in this way does not produce any bad effects. High frequency currents or currents of high potential have marked anodyne effects, and the counterirritation as produced by the static spark might also be of value. The electric high candle power light might also be employed, because of the heat produced, which would have the effect of relieving pain.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PAREGORIC EXEMPT UNDER THE HARRISON LAW

To the Editor:—In THE JOURNAL (March 4, 1916, Queries and Minor Notes) you state that camphorated tincture of opium comes under the Harrison Narcotic Law. Paregoric contains only 1$\frac{8}{100}$ grains of opium to the fluidounce; Section 6 of the Harrison Narcotic Law states that this act shall not be construed to apply to preparations and remedies which do not contain more than 2 grains of opium to the fluidounce. Therefore I do not think paregoric comes under the Harrison Narcotic Law.

A. G. BOWLES, M.D., Glen White, W. Va.

ANSWER.—The query and answer to which our correspondent refers concerned a prescription containing paregoric as one of several ingredients. Our interpretation of Treasury Decision 2213 was that while paregoric and other exempted preparations might be sold as such with or without a prescription so long as no other ingredients were added, a prescription which called for paregoric as one of several constituents came under the Harrison law. This was the interpretation placed on it by others also. Several correspondents, however, have questioned the correctness of this view, and we therefore referred the matter to the Treasury Department. Treasury Decision 2309, issued March 11, 1916, specifies (final paragraph):

"The refilling of a narcotic prescription for an exempted preparation or remedy, as herein defined, combined with other non-narcotic medicinal agents, with a consequent further dilution of the mixture, will be permitted."

According to this recent ruling, our correspondent's contention is right, and a prescription which contains paregoric as an ingredient does not come under the Harrison law, provided it contains no other narcotic.

ATOPHAN—TASTELESS CASTOR OIL—NONEMETIC IPECAC—LIQUID PETROLATUM—USE OF IODIN INTERNALLY—HISTORY TEXTBOOKS—ENGLISH JOURNAL OF TROPICAL MEDICINE

To the Editor:—Will you kindly answer the following questions?

1. Is there any evidence that atophan prevents the formation of renal calculi, or dissolves them to a certain extent when they are present?
2. What makes Kellogg's Tasteless Castor Oil tasteless? How is it prepared?
3. What makes alcresta ipecac nonemetic? What is its composition?
4. Has liquid petrolatum any service in local or general peritonitis? Is the claim that general peritonitis can be cured by intra-abdominal injection of liquid petrolatum supported by clinical evidence?
5. For what diseases is tincture of iodin injected internally?
6. What textbooks of history of medicine would you recommend?
7. Is there a journal of tropical medicine edited in England? How much does it cost?

SIXTO Y. OROSA, M.D.
Sulu Public Hospital, Golo, Sulu, P. I.

ANSWER.—1. Atophan is described in New and Nonofficial Remedies for 1916, p. 53. Its administration increases the elimination of uric acid in greater ratio than the increase in the amount of urine. There is no evidence that it decreases the formation of uric acid, or that it has any effect on

deposited urates. In fact, Weintraud considers it necessary to administer sodium bicarbonate simultaneously with atophan in order to prevent precipitation of free uric acid from the urine, possibly resulting in renal colic.

2. The so-called tasteless castor oil is said to be free from decomposition products which it is claimed cause the bad taste of castor oil.

3. Alcresta ipecac is a combination of ipecac alkaloids with fullers' earth, said to be insoluble in acid liquids, and therefore not decomposed in the stomach. It is said to be decomposed by alkaline fluids in the intestine with the liberation of ipecac alkaloids. Alcresta ipecac is described in New and Nonofficial Remedies for 1916, p. 160.

4. We are unable to find any reference to the use of injections of liquid petrolatum intra-abdominally as a cure for local or general peritonitis.

5. Iodin (free) should rarely or never be injected internally.

6. A list of books on the history of medicine was published in THE JOURNAL, Feb. 7, 1914, p. 476. Among the more recent may be mentioned:

Garrison, F. H.: Introduction to History of Medicine, Philadelphia, W. B. Saunders Company, $6.
Bass, J. H.: Outline of History of Medicine, New York, W. R. Jenkins Company, $6.
Neuberger, M.: History of Medicine, New York, Oxford University Press, Vol. I, $9; Vol. II, in preparation.
Park, R.: Epitome of the History of Medicine, Philadelphia, F. A. Davis Company, $2.

7. Journal of Tropical Medicine and Hygiene, semimonthly, price, $5. Published by Messrs. Bale, Sons and Danielsson, Ltd., 83 Great Titchfield St., London, W., England.

ARTICLES ON STERILIZATION OF THE UNFIT

To the Editor:—Please tell me where I may secure literature on the sterilization of the unfit as practiced in Indiana state institutions as well as in other states.

A. J. KEARNS, M.D., Loup City, Neb.

ANSWER.—The following is a list of articles on this subject:

Swift, H. M.: Sterilization of Unfit, *Maine Med. Assn. Jour.*, December, 1914.
The Davis Case and the Iowa Sterilization Law, Medical Economics, THE JOURNAL, July 25, 1914, p. 340.
Pogue, M.: Sterilization, Segregation or Custodial Care of Mental Defectives, *Illinois Med. Jour.*, October, 1914.
Peters, A. W.: Sterilization of Mental Defectives from Physiologic Standpoint, *Med. Rec.*, New York, Aug. 29, 1914.
Law Providing for Sterilization of Epileptics in Charitable Institutions Not Constitutional, Medicolegal, THE JOURNAL, March 14, 1914, p. 875.
Lydston, G. F.: Is Sterilization Destined to be a Social Menace? *Illinois Med. Jour.*, December, 1913; *Med. Rec.*, New York, Nov. 8, 1913.
Carey, H. M.: Compulsory Sterilization and Segregation of Mental Defective, *Illinois Med. Jour.*, November, 1913.
Champions, W. L.: Sterilization of Confirmed Criminals, Idiots, Rapists, Feebleminded and Other Defectives, *Georgia Med. Assn. Jour.*, August, 1913.
Bowers, E. L.: Sterilization of Degenerates, *Denver Med. Times and Utah Med. Jour.*, September, 1912, p. 148.
Mack, C. W.: Psychiatric Aspects of Sterilization Law, *Michigan State Med. Soc. Jour.*, August, 1913.
Singer, H. D.: Sterilization of Insane, Criminal and Delinquent, *Illinois Med. Jour.*, May, 1913.
Hegar, A.: Sterilization of the Unfit, *München. med. Wchnschr.*, Feb. 4, 1913.
Clark, C. M.: Plea for Sterilization of Criminals, Epileptics, Imbeciles and Insane, *Northwest Med.*, December, 1912.
Ellis, H. H.: Sterilization, *Denver Med. Times and Utah Med. Jour.*, September, 1912, p. 14.
Queries and Minor Notes, THE JOURNAL, Oct. 23, 1909, p. 1415; March 8, 1913, p. 769; Dec. 13, 1913, p. 2179.

Conservation of Food Supply.—The United States Department of Agriculture has established a laboratory to study the decomposition and fermentation of food products with the object of lessening the great waste that occurs from these causes. This work is in addition to the work of detecting adulteration. The investigations by this laboratory are intended to establish better methods for handling, packing, storing and shipping fish, poultry and eggs. The breakage of eggs in transit has heretofore occasioned great loss; this has been reduced by the adoption of methods developed by the laboratory for bracing eggs in cases, bracing cases in cars, and bracing, buffing and shifting cars. Experiments are under way to determine the best method of feeding poultry to increase weight and quality.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. John Wix Thomas, 200 National Bank of Arizona Bldg., Phoenix.
ARKANSAS: Regular, Little Rock, May 9. Sec., Dr. T. J. Stout, Brinkley; Eclectic, Little Rock, May 9. Sec., Dr. C. E. Laws, 712 Garrison Ave., Fort Smith.
CALIFORNIA: Los Angeles, April 4. Sec., Dr. Charles B. Pinkham, Room 527 Forum Bldg., Sacramento.
COLORADO: Denver, April 4. Sec., Dr. [illegible] A. Strickler, 612 Empire Bldg., Denver.
DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. E. P. Copeland, The Rockingham.
IDAHO: Boise, April 4. Sec., Dr. Charles A. Dettman, Burke.
ILLINOIS: Chicago, May 4-6. Sec., Dr. C. St. Clair Drake, Springfield.
MINNESOTA: Minneapolis, April 4-7. Sec., Dr. Thomas S. McDavitt, 814 Lowry Bldg., St. Paul.
MONTANA: Helena, April 4. Sec., Dr. William C. Riddell, Helena.
NEVADA: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.
NEW MEXICO: Sante Fe, April 10. Sec., Dr. W. E. Kaser, East Las Vegas.
OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. Ralph V. Smith, 502 Daniel Bldg., Tulsa.
PORTO RICO: San Juan, April 4. Sec., Dr. Quevedo Baez, 66 Allen St., San Juan.
RHODE ISLAND: Providence, April 6. Sec., Dr. Gardner T. Swarts, 315 State House, Providence.
UTAH: Salt Lake City, April 3-4. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.

Illinois October Report

Dr. C. St. Clair Drake, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Oct. 13-15, 1915. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 109, of whom 86 passed and 21 failed. Two candidates did not complete the examination. The following colleges were represented:

College	Year Grad.	Total No. Examined
PASSED		
Bennett Medical College	(1913) (1914, 3) (1915, 18)	22
Chicago College of Medicine and Surgery	(1909) (1913) (1914, 6) (1915, 12)	20
Chicago Hospital College of Medicine	(1915)	2
Chicago Medical College	(1884)	1
Hahnemann Med. Coll. and Hosp., Chicago	(1914) (1915)	2
Jenner Medical College	(1914) (1915, 7)	8
Northwestern University	(1914) (1915, 3)	4
Rush Medical College	(1896) (1915, 4)	5
University of Illinois	(1915)	6
Tufts College Medical School	(1913)	1
Harvard University	(1899)	1
Barnes Medical College	(1898)	1
Missouri Medical College	(1894)	1
National University of Arts and Sciences	(1914)	1
St. Louis College of Physicians and Surgeons	(1908)	1
St. Louis University	(1914)	1
University of Nebraska	(1915)	1
Cornell University	(1915)	1
Starling Medical College	(1884)	1
Eclectic Medical College, Cincinnati	(1894)	1
University of Virginia	(1915)	1
Milwaukee Medical College	(1911)	1
Marquette University	(1914)	1
National University of Athens	(1908) (1913)	2
FAILED		
Bennett Medical College	(1914, 2) (1915, 4)	6
Chicago College of Med. and Surg.	(1914, 2) (1915, 4)	6
Chicago Hospital College of Medicine	(1915)	3
College of Med. and Surg., Chicago, Physio-Medical	(1910)	1
Illinois Medical College	(1910)	1
State University of Iowa, College of Medicine	(1890)	1
University of Louisville	(1913)	1
National University of Arts and Sciences	(1914)	1
Meharry Medical College	(1908)	1

New Mexico October Report

Dr. W. E. Kaser, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fé, Oct. 11-12, 1915. The total number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. One candidate was examined and passed. Twelve candidates were licensed on satisfactory credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chattanooga Medical College	(1903)	75

LICENSED ON SATISFACTORY CREDENTIALS

College	Year Grad.	Total No. Licensed
George Washington University	(1910)	1
College of Physicians and Surgeons, Chicago	(1893)	1
Northwestern University	(1908)	1
Kentucky University	(1905)	1
University of Louisville	(1905) (1907)	2
Tulane University of Louisiana	(1898)	1
Kansas City Medical College	(1888)	1
Marion-Sims-Beaumont College of Medicine	(1903)	1
Medical College of Ohio	(1902)	1
University of Tennessee	(1915)	2

New York October Report

Mr. Harlan H. Horner, chief of the examinations division of the New York State Board of Medical Examiners, reports the written examination held at Albany, Buffalo, New York and Syracuse, Oct. 5-8, 1915. The total number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 171, of whom 119 passed, including 1 osteopath, and 52 failed, including 1 osteopath. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined
University of Colorado	(1911)	1
Georgetown University	(1913)	1
George Washington University	(1915)	1
Bowdoin Medical School	(1913)	1
College of Phys. and Surgs., Baltimore	(1913)	1
Johns Hopkins University	(1912) (1914)	2
University of Maryland	(1908) (1914)	2
Harvard University	(1908) (1915)	2
University of Michigan Medical School	(1911)	1
Dartmouth Medical School	(1910)	1
Albany Medical College	(1912) (1914, 2) (1915, 7)	10
Columbia University	(1912) (1913, 3) (1914, 4) (1915, 5)	13
Cornell University	(1913) (1914, 2) (1915, 2)	5
Fordham University	(1913, 2) (1914, 3) (1915, 3)	8
Long Island College Hospital	(1910) (1914, 2) (1915, 6)	9
New York Homeo. Med. Coll. and Flower Hospital	(1914, 7) (1915, 8)	15
Univ. and Bellevue Hosp. Med. Coll.	(1914, 4) (1915, 12)	16
University of Buffalo	(1914)	2
Hahnemann Medical College and Hospital	(1915)	1
Jefferson Medical College	(1912) (1914, 2) (1915)	4
Medico-Chirurgical College of Philadelphia	(1914)	1
Univ. of Pennsylvania	(1897) (1899) (1909) (1912, 2) (1915)	6
Woman's Medical College of Pennsylvania	(1914) (1915)	2
Vanderbilt University	(1913)	1
University of Texas	(1912)	1
University of Vermont	(1903) (1913) (1915, 3)	5
University of Virginia	(1913)	1
McGill University	(1914)	1
Queen's University	(1912)	1
University of Toronto	(1908)	1
University of Palermo	(1905)	1
Syrian Protestant College, Beirut	(1911)	1

FAILED

University of California	(1900)	1
Georgetown University	(1913)	1
George Washington University	(1915)	1
College of Phys. and Surgs., Baltimore	(1913) (1914)	2
Johns Hopkins University	(1909)	1
Boston University	(1909)	1
Albany Medical College	(1914, 5) (1915)	6
Columbia Univ., Coll. of Phys. and Surgs.	(1913) (1915)	2
Cornell University	(1915)	1
Fordham University	(1912, 2) (1913, 2) (1914) (1915, 3)	8
Long Island College Hospital	(1911) (1915)	2
New York Homeo. Med. Coll. and Flower Hospital	(1914, 5) (1915, 2)	7
New York Med. Coll. and Hosp. for Women	(1913)	1
University of Buffalo	(1901)	1
Medical College of Ohio	(1900)	1
Jefferson Medical College	(1912) (1913)	2
Medico-Chirurgical College of Philadelphia	(1915)	2
University of Pennsylvania	(1902)	1
University of Vermont	(1912) (1915)	2
Medical College of Virginia	(1913)	1
Queen's University	(1911) (1915)	2
University of Brussels	(1913)	1
University of Naples	(1883) (1905) (1912)	3

Wyoming October Report

Dr. H. E. McCollum, secretary of the State Board of Medical Examiners of Wyoming, reports the written examination held at Laramie, Oct. 13-15, 1915. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Colorado	(1912) 81.5; (1913)	89.9
University of Nebraska	(1914) 81.3,	76.7
University of Munich	(1912)	87.9

Book Notices

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES. Embracing the entire range of scientific and practical medicine and allied science. By various writers. Third Edition. Edited by Thomas Lathrop Stedman, A.M., M.D. Volume 6. Cloth. Price, $7. Pp. 967, with illustrations. New York: William Wood & Co., 1916.

The previous volumes of this extensive work have already been reviewed in THE JOURNAL. Volume VI, just at hand, is fully equal to the previous volumes. It contains numerous short biographic sketches of such physicians as Lister, Malpighi and Murchison. Among the larger subjects discussed are the liver and its diseases, the lungs, lupus, the lymphatic system, malaria, mastoid operations, medical licensing boards, the history of medicine, meningitis, mental diseases, metabolism, the microscope, milk, muscle, myopia, naval hygiene and the naval medical service, nematoda, nephritis, the nose, obesity, obstetrics, occupational diseases, old age, ophthalmology, optometry, organotherapy, otitis media and the ovaries. While these large topics are given extensive consideration, practically no phase of medicine occurring alphabetically in the letters covered by this volume is overlooked. The article on medical licensing boards by Otto V. Huffman is comprehensive, and, needless to state, accurate. The article on malaria is by von Ezdorf. The article on the history of medicine, by Newton, contains in a small amount of space a summary of medical history which should be read by every physician. The article on the microscope is well illustrated, and makes clear the mechanics and use of this instrument. The article on nematoda is by Henry B. Ward, and is followed by an article on neoplasms by Woglom. The section on nephritis is complete and modern. Max Hühner discusses the sexual neuroses, and Dyer the subject of nevus. The discussions of treatment are rational and extraordinarily free from the taint of "patent medicine" prescribing. Nascher discusses old age. The article on organotherapy, by Croftan, appears somewhat optimistic, but is this not true of practically all articles on this subject? The volume is well illustrated; the colored plates have been carefully chosen and are instructive. Under the subject of optometry is an excellent test letter chart. The Reference Handbook of Medical Sciences continues to sustain a well deserved good reputation.

BONE-GRAFT SURGERY. By Fred H. Albee, A.B., M.D., F.A.C.S., Professor of Orthopedic Surgery at the New York Post-Graduate Medical School. Cloth. Price, $6, net. Pp. 417, with 332 illustrations. Philadelphia: W. B. Saunders Company, 1915.

This is an important contribution to the field of bone surgery. Too much is claimed for the bone graft as a therapeutic agent. Operations in which a transplant is used have been devised and recommended for conditions in which perfectly satisfactory results can be obtained by simpler methods. The impression is conveyed that almost every case treated by the author's methods will terminate successfully, whereas no evidence is given that some of his operations have as yet been performed on man. More clinical experience must be forthcoming before these measures can be accepted so unreservedly.

The first of the eight chapters deals with the fundamental principles underlying the use of the bone graft. The views are given of various workers as to the part played by the periosteum, compact bone and endosteum. The transplant should consist of all three layers and be inserted by the inlay method so that they are in apposition with the same layers of the portion into which it is inserted. General and specific indications are enumerated for the use of the transplant. The author points out that a transplant placed in an infected area may be successful, but holds out perhaps too much encouragement for its use in such cases. A list of the necessary instruments is given with detailed instruction as to their use. The advantages of electrically driven saws, drills, lathes and burrs is pointed out. The author takes too much credit for the introduction of these agents, as they were previously in use in one type or another. His outfit, however, is one of the most complete and practical combinations that has been made. The chapter dealing with the intraspinal inlay for

the treatment of tuberculous spine is very complete, as both experimental and extensive clinical data are given in its support. The results in 532 cases in which operation was performed by the author and other surgeons are given. In 184 out of 198 personal patients operated on one year or over the disease was arrested. A questionable operation is the one recommended on the sacro-iliac joint in cases of tuberculosis, particularly in the vague condition of sacro-iliac subluxation.

The chapter on fractures is one of the best. The advantages of the bone graft over nonabsorbable material is well pointed out, and the author's method of insertion is urged over the intramedullary bone peg. The difficulties of the inlay method in cases of old ununited fractures with extreme atrophy are not sufficiently discussed. The author's treatment of most of the fractures of the long bones is excellent. The bone graft peg for intracapsular fractures of the neck of the femur for which he claims credit was first used by Lexer many years ago. A successful case is cited, but the difficulties of fixation in old cases, particularly where the neck and a part of the head are worn away and the remaining portions atrophied, are not pointed out. Some of the operations recommended are quite fanciful and seem to have been devised more to extend the field of the bone graft than for their usefulness: Such are the inlay for fracture of the patella and the wedge shaped graft into the split scaphoid in congenital clubfoot and into the tibia after osteotomy for bow leg. In the arthrodeses and resections on the hip, knee and about the ankle, transplants are inserted in addition to the removal of the articular cartilage. This is also done in case the resection is for tuberculosis, and the author claims to have had no subsequent loss of transplants; but his assertion that bony union was always complete in six weeks sounds questionable. The illustrations are numerous and excellent.

OCCUPATION THERAPY. A Manual for Nurses. By William Rush Dunton, Jr., B.S., M.A., M.D., Assistant Physician at Sheppard and Enoch Pratt Hospital, Towson, Md. Cloth. Price, $1.50 net. Pp. 240, with 43 illustrations. Philadelphia: W. B. Saunders Company, 1915.

THE WORK OF OUR HANDS. A Study of Occupations for Invalids. By Herbert J. Hall, M.D., and Mertice M. C. Buck. Cloth. Price, $1.50 net. Pp. 211, with illustrations. New York: Moffat, Yard & Co., 1915.

Dr. Dunton's book is based on a series of talks given to nurses at Sheppard and Enoch Pratt Hospital, and follows in arrangement the "course in occupation" given at that institution. Perhaps a better title would have been "Diversional Therapy." The primary purpose of occupation in therapy is "to divert the patient's attention from unpleasant subjects." A number of diversions, ranging from card games to stamp-collecting, and of diversional occupations, ranging from the making of starched beads to basketry and "drawing and painting," are described.

Dr. Hall and Miss Buck discuss occupations for invalids from a wider point of view than that of diversion. Dr. Hall believes in productive work as "not only gymnastic and physically restorative, but morally strengthening as well." The market value of effort, he believes, is "deep and significant"; and he considers it possible, by careful planning, to organize special self-supporting industries for the employment of persons handicapped in various ways.

BACTERIOLOGICAL METHODS IN FOOD AND DRUGS LABORATORIES. With an Introduction to Micro-Analytical Methods. By Albert Schneider, M.D., Ph.D., Professor of Pharmacognosy, College of Pharmacy of the University of California. Cloth. Price, $2.50 net. Pp. 288, with 93 illustrations. Philadelphia: P. Blakiston's Son & Co., 1915.

The federal and state food and drugs acts have necessitated the introduction of bacteriologic methods into food and drugs laboratories. Dr. Schneider suggests that, because of the close relationship between the work of the bacteriologist and that of the micro-analyst, it is desirable that the two branches be combined in such manner that they may cooperate as effectively as possible. This volume is intended to be instrumental in the unification of methods, which are not yet fully worked out in either branch. To this end it contains, in addition to bacteriologic methods, an outline of micro-analytic methods. Its use as a laboratory guide presupposes a knowledge of general bacteriology.

Medicolegal

Admissibility in Evidence of Certificate of Death and Testimony of Physicians

(*Gilchrist vs. Mystic Workers of the World (Mich.), 154 N. W. R. 575*)

The Supreme Court of Michigan reverses, for error in the admission of evidence, a judgment obtained by the plaintiff on a benefit certificate issued to his wife. There was offered in evidence a certificate of death, signed by the attending physician, which stated that the cause of death was peritonitis. "Contributory. Abortion, said by deceased to have been performed by Dr. ————." The trial judge sustained an objection excluding the portion quoted. The objection was that this was hearsay, and therefore incompetent, and not a proper part of the certificate required by the statute. But the supreme court is of the opinion that the certificate properly included the words "Contributory. Abortion." A fair interpretation of the certificate was that the contributing cause of death was within the knowledge of the physician, and was not hearsay. The remainder of the certificate was hearsay. The proper certificate was admissible under the statute. As to knowledge obtained by physicians in their professional capacity while attending the insured as their patient, the court holds that it was privileged and they might not testify thereto notwithstanding a waiver of the statutory privilege by the insured in her application for insurance. The court says that the Michigan statute creates an absolute privilege, with but one exception, where a waiver may be made by the representatives of the deceased patient, and that only in a contest on the question of admitting the patient's will to probate. The statute contains this stringent prohibition, and the patient's waiver of the privilege was of no force or effect. It has been the policy of the legislature and the courts of Michigan to protect this privilege. The waiver contained in the application was therefore against public policy and void, and the testimony of the attending physicians as to all knowledge obtained by them in such capacity was properly excluded. This included all of the testimony of the physicians as to matters which were obtained from the deceased in their professional capacity, together with their opinion based on such information. Nor were certain alleged statements of the deceased made to these physicians and to one of them in the presence of a nurse admissible because of the waiver clause and because they were part of res gestae or essential circumstances, as contended. The court does not consider that they could be regarded as part of the res gestae, and thinks that what is said above disposes of the contention relative to the waiver clause. But the testimony of the nurse was admissible in so far as it stated an admission by the insured of the cause of her ailment. The statute does not exclude the testimony of the nurse.

Damages for Wrongful Notice to Employees Not to Call Named Physician

(*Peek vs. Northern Pac. Ry. Co. et al. (Mont.), 152 Pac. R. 421*)

The Supreme Court of Montana directs that a judgment for $700 damages obtained by the plaintiff be corrected to award damages in the sum of $1. The court says that it was alleged that the defendants—the railway company and certain of its officials—conspiring to injure him in his profession as a physician, published and brought to the attention of the employees of the company a notice addressed to all yard employees, that: "In case of accident to an employee where medical attention is needed at once, do not in any case call Dr. Peek. If company doctor cannot be located, order ambulance and have party sent to hospital." That said notice was maliciously intended to and did injure the plaintiff in his business. That by it many of the employees of the railway company who would otherwise have dealt with the plaintiff were prevented from doing so, in consequence of which he lost business to his damage. The evidence disclosed, among other things, a letter from the president of the company to the general superintendent, directing attention to the fact that much annoyance

and some expense had been caused to the Northern Pacific Beneficial Association, an organization of employees of the railway company for the purpose of furnishing medical and surgical aid to its members, on account of a disposition on the part of certain employees to call on Dr. Peek for medical and surgical service without any proper effort being made to secure one of the association's authorized surgeons, and "without much regard for N. P. B. A. rules." In illustration of the conditions it was pointed out that Dr. Peek had recently presented a bill for $1,600 for services rendered, including an operation which it was believed was unnecessary. The plaintiff testified that there had been a visible loss of about $70 per month in his medical practice with yard employees of the company from the date of the quoted notice to them; but he prosecuted his case on the theory, which was entirely correct, that his right of action was not for the loss of general practice among employees of the railway company, but for the loss of such emergency practice chargeable to the beneficial association as would have come to him but for the notice complained of; in other words, that the defendants had and could have no authority to say that the beneficial association would not deal with the plaintiff in any case. That the beneficial association could, under proper circumstances, have lawfully signified to its members by any proper means its indisposition to have any dealings whatever with the plaintiff, the court thinks was beyond dispute. Moreover, the letter of the president of the company was ample warrant for the defendants to proceed according to its purport, but it did not go beyond the request for suitable steps to enforce the rule of the association restricting the call of outside surgeons to cases of emergency and pending the arrival of the authorized surgeon. From this the notice in question was a material departure. However, so far as damages were concerned, there was a total failure of proof—nothing to show what portion of the plaintiff's whole loss came within the class for which liability was claimed, and he must be relegated to his right to nominal damages only.

Society Proceedings

COMING MEETINGS

Alabama State Medical Association, Mobile, April 18.
American Assn. of Genito-Urinary Surgs., Washington, D. C., May 9-10.
American Association of Path. and Bact., Washington, D. C., May 9-11.
American Climatological and Clin. Assn., Washington, D. C., May 9-11.
American Dermatological Association, Washington, D. C., May 8-10.
American Gastro-Enterological Association, Washington, D. C., May 8-9.
American Gynecological Society, Washington, D. C., May 9-11.
American Laryngological Association, Washington, D. C., May 9-11.
Amer. Laryn., Rhin. and Otol., White Sulphur Sprgs., W. Va., May 5-6.
American Medico-Psychological Association, New Orleans, April 4-7.
American Ophthalmological Society, Washington, D. C., May 9-11.
American Orthopedic Association, Washington, D. C., May 8-11.
American Otological Society, Washington, D. C., May 9-10.
American Pediatric Society, Washington, D. C., May 8-10.
American Society of Tropical Medicine, Washington, D. C., May 9-11.
American Surgical Association, Washington, D. C., May 9-11.
American Urological Association, St. Louis, April 17-19.
Arizona Medical Association, Phoenix, April 26-27.
Arkansas Medical Society, Texarkana, May 2-4.
Association of American Physicians, Washington, D. C., May 9-11.
California State Medical Society, Fresno, April 18-20.
Conference of State and Prov. Boards of N. A., Washington, May 16-17.
Cong. Am. Phys. and Surgs. of No. Am., Washington, D. C., May 9-10.
Connecticut State Medical Society, Bridgeport, May 17-18.
Florida Medical Association, Arcadia, May 10-12.
Georgia Medical Association, Columbus, April 19-21.
Illinois State Medical Society, Champaign, May 16-18.
Iowa State Medical Society, Davenport, May 10-12.
Kansas Medical Society, Topeka, May 3-5.
Louisiana State Medical Society, New Orleans, April 18-20.
Mississippi State Medical Association, Greenville, May 9-11.
Missouri State Medical Association, Excelsior Springs, May 8-10.
National Assn. for Study and Prev. of Tuberc., Wash., D. C., May 11-12.
Nebraska State Medical Association, Omaha, May 23-25.
New Hampshire Medical Society, Concord, May 16.
New York State Medical Society, Saratoga Springs, May 16.
North Carolina State Medical Society, Durham, April 18.
North Dakota State Medical Association, Devils Lake, May 10-11.
Ohio State Medical Association, Cleveland, May 17-19.
Oklahoma State Medical Association, Oklahoma City, May 9-11.
South Carolina Medical Association, Charleston, April 18-20.
South Dakota State Medical Association, Aberdeen, May 23-25.
Tennessee State Medical Association, Knoxville, April 4-6.
Texas State Medical Association, Galveston, May 9-11.
West Virginia State Medical Association, Wheeling, May 16-18.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

March, XIX, No. 2, pp. 149-352

1 Sinoventricular System as Demonstrated by Injection Method. M. R. King, San Francisco.
2 *Interrelations of Mesonephros, Kidney and Placenta in Different Classes of Animals. J. L. Bremer, Boston.
3 Development of Liver and Pancreas in Amblystoma Punctatum. E. A. Baumgartner, Minneapolis.
4 Microscopic Structure of Yolk Sac of Pig Embryo, With Special Reference to Origin of Erythrocytes. H. E. Jordan, Charlottesville, Va.
5 *Effects of Inanition on Structure of Thyroid and Parathyroids of Albino Rat. C. M. Jackson, Minneapolis.

2. **Interrelations of Mesonephros, etc.**—From the facts deduced by Bremer it appears that embryonic and fetal urinary excretion takes place wholly through the placenta in the rat, at first through the Wolffian body and later through the placenta in the rabbit, guinea-pig and man, but never through the placenta in the pig, sheep or cat.

5. **Inanition of Thyroid in Rats.**—The more important results of Jackson's investigation are summarized by him as follows: In young rats held at maintenance for several weeks (and hence in a condition of chronic inanition), the histologic changes in the thyroid are varied. The follicular epithelium is atrophied, with reduction in height. The nuclei are rarely hypochromatic (various stages of karyolysis), but hyperchromatosis is more typical, the nuclei usually presenting some stage of pycnosis. In extreme cases the nucleus becomes fragmented (karyorrhexis). Neither mitosis nor amitosis is found. The cytoplasm is usually reduced in amount considerably more than the nucleus; usually becomes rarefied with a marked vacuolization and loss of the normal granulation. In some cases the cytoplasm may become homogeneous and in advanced stages may disintegrate. The intrafollicular colloid may show no abnormal changes. Advanced stages of degeneration in the follicular epithelium, however, are accompanied by dissolution and disintegration of the colloid. The interfollicular connective tissue (stroma) usually shows no very marked change in structure, but is often increased in volume by an infiltration of ground substance, giving a somewhat edematous appearance. On this account, the whole thyroid gland may show but little loss in absolute weight, although there has been a marked atrophy of the parenchyma. In the adult rats subjected to acute and chronic inanition, the changes in the structure of the thyroid gland are likewise varied, but in general similar to those found in the younger rats. In adult rats during acute and chronic inanition, the reduction in the size of the parathyroids is nearly proportional to that of the body as a whole.

American Journal of Orthopedic Surgery, Boston

March, XIV, No. 3, pp. 119-190

6 Review of Ten Years' Work at Sea Breeze Hospital for Surgical Tuberculosis. B. H. Whitbeck, New York.
7 *Five Hundred and Thirty-Nine Cases of Pott's Disease Treated by Bone Graft. F. H. Albee, New York.
8 *Results of Nonoperative Treatment of Infantile Paralysis. A. O'Reilly, St. Louis.
9 Cervical Ribs; Report of Seven Cases With One Operative Case. W. W. Plummer, Buffalo.
10 Subungual Exostosis. A. J. Davidson, Philadelphia.
11 Old Dislocation of Clavicle in Child. C. H. Baldwin, Utica, N. Y.

8. **Nonoperative Treatment of Infantile Paralysis.**—Of forty-six cases seen by O'Reilly, 35 have received massage regularly. There were 24 acute cases, seen within one year after the onset of the disease, 22 chronic cases seen one year or more after the onset of the disease. In the group of acute cases, 11, or 46 per cent., showed some improvement, while of the chronic cases, 9, or 41 per cent. showed some improvement; and 15, or 43 per cent., of those cases receiving massage and exercises improved. Eleven cases were treated without massage and exercise, and of these, 5, or 45 per cent., improved. Of these, 56 per cent. of the cases treated showed

no improvement. O'Reilly emphasizes that it is very difficult to treat infantile paralysis nonoperatively in an outpatient clinic, owing to the difficulty of inducing the patients to attend regularly for any length of time. From 40 to 45 per cent. of the cases show some improvement when treated by braces, and this percentage is not materially increased by the use of massage. Improvement in all cases in which it was noted was not great, and recovery of muscle power in stretched and exhausted muscles seems to be slight. In the majority of cases no improvement took place after six months, especially in the more severe cases. From his experience O'Reilly believes that one is safe in operating on any case in infantile paralysis after the first year and that this should be done in suitable cases. The patients are then more easily induced to come to the clinic and the end results are more satisfactory.

American Journal of Roentgenology, New York

February, III, No. 2, pp. 63-122

12 *Treatment of Exophthalmic Goiter by Means of Roentgen Rays. G. E. Pfahler and J. D. Zulick, Philadelphia.
13 *Recent Results in Roentgen Ray Treatment of Menorrhagia, Dysmenorrhea and Uterine Myoma. S. Lange, Cincinnati.
14 Modern Roentgen Therapy. G. C. Johnston, Pittsburgh.
15 *Local Application of Radium Supplemented by Roentgen Therapy. R. H. Boggs, Pittsburgh.

12, 13 and 15. Abstracted in THE JOURNAL, Nov. 6, 1915, pp. 1669 and 1670.

Archives of Internal Medicine, Chicago

March, XVII, No. 3, pp. 343-458

16 Ventricular Hemorrhage: Symptom Group. A. Gordon, Philadelphia.
17 Gastric Mucosa in Delirium Tremens. E. F. Hirsch, Chicago.
18 *Circulatory Reaction to Graduated Work as Test of Heart's Functional Capacity. T. B. Barringer, Jr., New York.
19 *Some Attempts to Produce Exophthalmos Experimentally. A. Troell, Stockholm, Sweden.
20 Clinical Study of Edema by Means of Elastometer. A. B. Schwartz, Chicago.
21 Uric Acid Solvent Power of Urine After Administration of Piperazin, Lysidin, Lithium Carbonate and Other Alkalies. H. D. Haskins, Portland, Ore.
22 Serologic Examinations in Case of Polycythemia. H. A. Freund and W. K. Rexford, Detroit.
23 Toxicity of Various Commercial Preparations of Emetin Hydrochlorid. R. L. Levy and L. G. Rowntree, Baltimore.
24 Three Cases of Purpura Hemorrhagica in Chronic Tuberculosis. S. Bauch, New York.
25 *B. Welchii in Stools of Pellagrins. W. H. Holmes, Chicago.

18. **Test of Heart's Functional Capacity.**—A large number of experiments have been carried out by Barringer on normal persons and those suffering from heart insufficiency to determine the effect of graduated work on the pulse rate and systolic blood pressure. The work was performed by means of a Krogh bicycle ergometer in a few persons and by dumbbell exercises in the majority of subjects. It was demonstrated that a certain form of the curve of systolic blood pressure determined after the completion of work is characteristic of an overtaxing of the heart's functional capacity.

19. **Attempts to Produce Exophthalmos Experimentally.**—This is the final report of Troell's attempts to produce exophthalmos experimentally. Considered together, he says, they show that whenever they proceeded from the assumption of cooperation through sympathetic stimulation, they were negative; but that in that group of cases in which paraphenylenediamin injections were made for the purpose, they were positive, even when the cooperation of the sympathetic had been eliminated. Thus far they have proved that an exophthalmos—one not resulting from an intra-orbital tumor, or some such cause—may arise without any intermediation of the cervical sympathetic. Troell's investigations show, among other things, how necessary it is to refrain from erroneous combinations. The temporary but slight forward shift of the bulb which, at least in certain animals, is likely to be produced by a direct electric stimulation of the cervical sympathetic is one thing, the somewhat more lasting protrusio bulbi in dogs after a subcutaneous paraphenylenediamin injection is quite another matter; and exophthalmos in exophthalmic goiter, sometimes continuing for years and occasionally of extremely pronounced character, has peculiarities that make it also a distinct group. There is much to be said against the assumption that exophthalmos in exophthalmic goiter may be the result of a sympathetic stimulation. The entire aspect of the eye changes in paraphenylenediamin intoxication as a rule makes the impression of disturbance of the circulation, edema, which is by no means the most striking feature of exophthalmic goiter—although there are some similarities between them that are worthy of note (such as palpebral edema occasionally arising in exophthalmic goiter). On the whole, the question of the genesis of exophthalmos in exophthalmic goiter remains unsolved.

25. **B. Welchii in Stools of Pellagrins.**—Holmes calls attention to the presence of abnormally large numbers of organisms belonging to the *B. Welchii* group, which have been found in the stools of pellagrins. These pellagrins were on a dietary composed principally of vegetable foods high in carbohydrates. The diet was extremely low in protein and especially in protein of animal origin. *B. Welchii* has been found to produce severe diarrhea in children and adults in the presence of a high carbohydrate diet. The diarrhea caused by *B. Welchii* can be cured by a protein diet and buttermilk. Goldberger has prevented pellagra by the addition of proteins and buttermilk to the diet, and has experimentally caused pellagra by means of a pure carbohydrate diet. Whether *B. Welchii* was present in the stools of Goldberger's cases in greatly increased numbers is not known. These facts by no means prove that *B. Welchii* is the direct or sole cause of pellagra, but their coincidence is sufficiently significant to justify further investigation.

Archives of Ophthalmology, New Rochelle, N. Y.

March, XLV, No. 2, pp. 109-203

26 Purulent Conjunctivitis in Infants Under Two Months of Age. A. W. Williams and C. Rosenberg, New York.
27 Digital Compression of Lacrimal Sac in Dacryocystitis, Especially of Newborn. J. Santos-Fernandez, Havana, Cuba.
28 Anomalies of Accommodation, Clinically Considered. A. Duane, New York.
29 Tenotomy of Inferior Oblique Muscle. W. C. Posey, Philadelphia.
30 Rosacea Keratitis and Certain Other Forms of Marginal Keratitis, Neuropathic in Origin. Treatment by Pericorneal Neurotomy. F. H. Verhoeff, Boston.
31 Bacteriologic and Clinical Studies of Epidemic of Koch-Weeks Bacillus Conjunctivitis Associated With Cell Inclusion Conjunctivitis. H. Noguchi and M. Cohen, New York.
32 Clinical Pathology of Ocular Muscle Paralysis. W. Walter, Chicago.

Archives of Pediatrics, New York

February, XXXIII, No. 2, pp. 81-160

33 *Prevention of Respiratory Diseases in Early Life. R. S. Haynes, New York.
34 *Institutions as Foster Mothers for Infants. A. F. Hess, New York.
35 Mitral Stenosis in Young Children. M. H. Bass, New York.
36 *Intestinal Parasites in Children. H. B. Ward, Urbana, Ill.

33 and 34. *Abstracted in THE JOURNAL, January 1, pp. 55 and 58.

36. **Intestinal Parasites in Children.**—Attention is directed by Ward to the fact that modern textbooks on pediatrics are not correct in their statements on this subject. An analysis of evidence presented by Ward shows that two general conclusions concerning parasites in children are safe: (1) they are more frequent than commonly stated; (2) there are more varieties than usually listed. Among the trematodes or flukes there are none in this country which constitute a menace to the child. Among the cestodes or tapeworms there are three species conspicuous for their size and long known by virtue of this and their abundance in certain regions. These are the pork tapeworm, tenia solium, the beef tapeworm, tenia saginata and the fish tapeworm, dibothriocephalus latus. All of these have been reported from hosts of all ages, even from suckling infants. But such cases are great rarities among many thousands of records. No one of them is as likely to be parasitic in a child as in an adult. Of the approximate thirty varieties of cestodes recorded from the human host, four are said to occur chiefly in children. Davainea madagascariensis has been reported only

from tropical regions and the total number of cases on record is small. Of nine cases, two only are in adults. Dipylidium caninum is a normal parasite of dog and cat and is extremely abundant in those hosts. About 100 cases in man are on record. Most of these concern children, even of very immature age.

Two species of Hymenolepis have been recognized in recent years as frequent parasites of man. These are Hymenolepis nana and Hymenolepis diminuta. The nematodes or roundworms furnish more parasites to the human species and consequently more to children than either of the groups mentioned before. They are of Ascaris lumbricoides, the stomach worm, Oxyuris vermicularis, the pinworm, and Trichuris trichiura, the whipworm. Hookworm disease is conspicuously a disease of the young. Protozoa play an important rôle as parasites of the human intestine. Protozoa are exceedingly common in children. Ward emphasizes the importance of frequent fecal examinations and then warns against pitfalls in the path of the diagnostician in the form of foreign materials usually of plant origin that are too easily diagnosed as worms. The most common in the feces of the child are pulp vesicles from the orange that simulate closely some sort of a fluke and the partly digested fiber of the banana, that are strikingly like a mass of small tapeworms.

Boston Medical and Surgical Journal

March 16, CLXXIV, No. 11, pp. 371-406

37 Analysis of Fourteen Cases of Diabetes Mellitus Unsuccessfully Treated by Fasting. (To be continued). E. P. Joslin, F. G. Brigham and A. A. Hornor, Boston.
38 Gunshot Wounds of Thorax. W. M. Boothby, Boston.
39 *How Can We Detect Slight Enlargement of Heart? G. C. Shattuck, Boston.

39. **How Can Slight Enlargement of Heart be Detected?**—The importance of skilful physical examination and careful history as a means of discovering abnormality in the circulatory system and slight signs of enlargement of the heart are emphasized by Shattuck. When findings are inconclusive, he says, an examination with the fluoroscope may quickly clear up the diagnosis. In other cases an orthodiagram or a teleoroentgenogram may provide important information by showing slight abnormality in the outline or measurements of the heart. Even with good technic none of these methods are faultless, and normal heart size is variable. Therefore, enlargement should be judged, not by millimeters, but by centimeters. By using heart measurements, Shattuck says, it should be possible to detect enlargements of two centimeters in transverse diameter of the heart in most cases, but enlargements of three centimeters may occur without exceeding the maximum figures and in such cases abnormality may be difficult to demonstrate. Abnormal shape may give the earliest evidence by hypertrophy. As to the relative merits of orthodiagraphy and of teleoroentgenography, neither method is satisfactory without proper equipment, nor in the hands of one unfamiliar with its difficulties and possible sources of error.

Delaware State Medical Journal, Wilmington

December, 1915, VII, No. 1, pp. 1-11

40 Physician, Past, Present and Future. H. W. Briggs, Wilmington.

Journal of Biological Chemistry, Baltimore

March, XXIV, No. 3, pp. 173-421

41 Casein of Goat's Milk. A. W. Bosworth and L. L. Van Slyke, Geneva, N. Y.
42 Soluble and Insoluble Compounds of Goat's Milk. A. W. Bosworth and L. L. Van Slyke, Geneva, N. Y.
43 *Comparison of Composition of Cow's Milk, Goat's Milk and Human Milk. A. W. Bosworth and L. L. Van Slyke, Geneva, N. Y.
44 *Chemical Changes in Souring of Milk. L. L. Van Slyke and A. W. Bosworth, Geneva, N. Y.
45 *Rate of Urea Excretion. T. Addis and C. K. Watanabe, San Francisco.
46 Increase of Nitrogen in Fermenting Manures. W. E. Tottingham, Madison, Wis.
47 Determination of Cholesterol in Blood. W. R. Bloor, Boston.
48 *Mass Action in Activation of Unfertilized Starfish Eggs by Butyric Acid. R. S. Lillie, Worcester, Mass.
49 *Presence of Epinephrin in Human Fetal Suprarenals. J. H. Lewis, Chicago.
50 Cell Penetration by Acids. W. J. Crozier, Boston.
51 Rate of Oxidations in Reversed Artificial Parthenogenesis. H. Wasteneys, New York.
52 Units of Reference for Basal Metabolism and Their Interrelations. C. R. Moulton, Columbia, Mo.
53 Electrolytic Determination of Iodin Present in Organic Matter. R. B. Krauss, Philadelphia.
54 Studies on Theory of Diabetes. Behavior of dl-Glycerie Aldehyd in Normal and Diabetic Organism. W. D. Sansum and R. T. Woodyatt, Chicago.
55 Id. Intravenous Tolerance Limit for dl-Glyceric Aldehyd and Improbability that it is Chief Intermediate in Glucose Catabolism. W. D. Sansum and R. T. Woodyatt, Chicago.
56 Experimental Studies on Growth. T. B. Robertson and L. A. Ray, Berkeley, Calif.
57 Id. Normal Growth of White Mouse. T. B. Robertson, Berkeley, Calif.
58 *Id. Influence of Anterior Lobe of Pituitary Body on Growth of White Mouse. T. B. Robertson, Berkeley, Calif.
59 *Id. Influence of Tethelin, Growth Controlling Principle of Anterior Lobe of Pituitary Body on Growth of White Mouse. T. B. Robertson, Berkeley, Calif.
60 Isolation and Properties of Tethelin, Growth Controlling Principle of Anterior Lobe of Pituitary Body. T. B. Robertson, Berkeley, Calif.

43. **Composition of Milk.**—Goat's milk is said to differ from cow's milk (1) in containing tricalcium, dimagnesium and trimagnesium and monopotassium phosphates, and (2) in containing no monomagnesium or dipotassium phosphates. Human milk differs noticeably from both cow's and goat's milk in containing no insoluble phosphates, but only the soluble compounds, monomagnesium and monopotassium phosphates. The phosphates in human milk are much less in amount that in cow's or goat's milk. All three milks contain potassium citrate, while cow's milk and human milk contain sodium citrate also. Chlorids are present in goat's milk in much larger amounts than in cow's milk or human milk; the amount in cow's milk is considerably larger than in human milk. In cow's milk and human milk the chlorid appears to be calcium chlorid, while in goat's milk potassium and sodium chlorids are also present. The total amount of salts in human milk is about one third that in cow's milk or goat's milk. The number of different salts appears to be greatest in goat's milk and least in human milk.

44. **Chemical Changes in Souring Milk.**—Fresh milk was analyzed by Van Slyke and Bosworth for its soluble and insoluble constituents, a porous porcelain filter being used to make separation. Another portion of the same milk was inoculated with a culture containing *Bacterium lactis acidi* and *Bacterium lactis aerogenes*. At the end of sixty hours determinations were made of the soluble and insoluble portions. (*a*) About 22 per cent. of the milk sugar is changed by the lactic acid bacteria, 88.5 per cent. of the amount changed being converted into lactic acid. (*b*) Citric acid completely disappears. (*c*) The insoluble inorganic constituents of the fresh milk are made soluble by the lactic acid. (*d*) Albumin of sour milk passes through the porcelain filter completely. (*e*) Calcium caseinate is changed into free protein and precipitated, the calcium forming lactate.

45. **Rate of Urea Excretion.**—According to Addis and Watanabe the rate of urea excretion in man varies under physiologic conditions in a manner which cannot be explained by the concentrations of urea in the blood and urine. There is a tendency for an increased rate of urea excretion to exist with higher blood urea concentration in cases in which the urine concentration is the same, and for an increased rate of urea excretion to be accompanied by a lowering of the urea concentration in the urine in cases in which the blood concentration is the same. This relationship, however, is one which is frequently obscured, even in individuals under the same conditions as regards nitrogen and water intake. Other factors than urea concentration are important in determining the rate of urea excretion by the normal kidney.

48. **Activation of Starfish Eggs.**—Lillie found that unfertilized starfish eggs may be caused to develop into larvae by a sufficiently prolonged exposure to weak solutions of butyric acid in sea water or van't Hoff's solution. No supplementary or "corrective" treatment is required. In order to produce complete activation the eggs must be exposed to the solution for a certain minimal time which is a function of the concentration of acid. Exposures briefer than this optimum cause partial activation, membrane formation followed by imperfect

cleavage and breakdown; activation may be completed by a second exposure to the same solution. Exposures longer than the optimum injure the eggs and interfere with activation. Activation is a progressive process which under uniform conditions of temperature and physiologic state of the eggs appears to proceed at an approximately uniform rate. This rate is closely proportional to the concentration of butyric acid, within a range of 0.0005 n to 0.006 n. The most consistent interpretation of these facts seems to be that the acid activates the egg by combining chemically with some egg constituent until a certain quantity of a definite reaction product is formed. The time required to produce this critical quantity will, in accordance with the mass action law, be inversely proportional to the concentration of acid.

49. **Epinephrin in Human Fetal Suprarenals.**—Epinephrin could not be found by Lewis in human fetal suprarenals by the use of the blood pressure method and chemical tests. A suggestion of the presence of epinephrin was found in the suprarenals of two full term fetuses by the use of strips of uterus and intestines contracting in warm oxygenated Ringer's solution. The extract of the suprarenals of a 6 months' fetus tested with a contracting intestinal strip was entirely negative. The Folin-Denis test could not be used to determine epinephrin in fetal tissues, because of their high content of uric acid.

58. **Influence of Anterior Lobe on Growth of White Mouse.**—The administration of 0.125 gm. per day per animal of fresh anterior lobe pituitary tissue to mice, beginning at four weeks after birth (conclusion of the second growth cycle), Robertson says, leads to retardation of growth during the earlier portion of the third growth cycle, between the sixth and twentieth weeks. In the latter part of the third growth cycle, however, from the twentieth to the sixtieth weeks after birth, the growth of the pituitary fed animals is markedly accelerated, so that they not only catch up to the normals, but actually, at about 1 year of age, come to surpass the normals in weight. The effect of the pituitary tissue on the variability of the weight of the animals is similar to its effect on the velocity of their growth. The variability is diminished in the earlier portion of the third growth cycle, particularly between the tenth and the twentieth weeks. Between the twentieth and the sixtieth weeks, however, the variability curves of the pituitary fed animals approach the variability curves of the normals, and at about the fortieth or fiftieth week the two variability curves intersect. Pituitary fed animals, from about the thirtieth week onward, appear more compactly built than normal animals. The pituitary fed animals, weight for weight, are smaller than the normals of the same age, and size for size they are heavier. Pituitary fed males are noticeably more belligerent in their habits than normal males.

59. **Influence of Tethelin on Growth of White Mouse.**—From the concentrated alcoholic extract of dried anterior lobes of ox pituitaries a substance may be precipitated by the addition of one and one half volumes of dry ether. This substance Robertson has termed tethelin. The effects of tethelin on the growth of white mice resemble in every particular the effects of the administration of the whole anterior lobe. These effects consist in marked retardation of the first portion of the third growth cycle followed by acceleration of the latter portion of the third growth cycle. The variability in weight of the tethelin fed animals, like that of the pituitary fed animals, is less than that of normals of the same age. Adult tethelin fed animals, like adult animals which have been fed on the anterior lobe of the pituitary body, are more compact in form and build than normal animals of the same age. Weight for weight the tethelin fed animals are smaller than the normal ones, and size for size they are heavier.

Kansas Medical Society Journal, Topeka

March, XVI, No. 3, pp. 65-96

61 Every General Practitioner Public Health Officer. L. A. Clary, Hutchinson.
62 Relation of Various Streptococci to Rheumatism and Endocarditis. F. H. Morley, Kansas City.
63 Bronchopneumonia; Its Common Complications. T. C. Kimble, Miltonvale.
64 Some Interesting Cases of Protein Sensitization. J. G. Missildine, Parsons.
65 Practical Control of Contagious Disease. H. B. Wood, Topeka.
66 Rupture of Lung by Bursting. H. W. Davis, Durham.

Medical Record, New York

March 11, LXXXIX, No. 11, pp. 455-500

67 Influenza. A. H. Doty, New York.
68 Treatment of Gastric Ulcer. A. F. R. Andresen, Brooklyn.
69 Study of Influence of Electricity on Metabolism. M. Steel, Brooklyn.
70 Can We Diagnose Appendicitis? P. I. Nixon, San Antonio, Tex.
71 Nonsurgical Treatment of Tuberculous Glands. A. F. Holding, New York.
72 Intramuscular Injections of Mercury Salicylate in Treatment of Syphilis. W. H. Best, Brooklyn.

March 18, No. 12, pp. 501-542

73 Use of Trickery to Discount Medical Testimony. E. R. Corson, Savannah, Ga.
74 *Pollen Therapy in Pollinosis. S. Oppenheimer and M. J. Gottlieb, New York.
75 Flatulence and Meteorism and Their Treatment. M. Einhorn, New York.
76 Diagnosis of Genito-Urinary Tuberculosis. J. W. Churchman, New Haven, Conn.
77 Faith Cures. J. A. Gilbert, Portland, Ore.
78 American Method of Cataract Extraction. J. Santos-Fernandez, Havana, Cuba.
79 Marantic State. C. R. Green, Troy.

74. **Pollen Therapy in Pollinosis.**—The authors warn against hay-fever vaccines which contain a mixture of a large number of pollen extracts, such mixture being given both for spring and fall cases. No diagnostic means are employed to determine which pollen or pollens are operative in a given case. Under these conditions many a patient who is suffering from the spring variety of pollinosis, being already a fit subject for further sensitization, is placed in danger of becoming sensitized to those pollens which are active during the fall. It is also stated by the authors that pollen extracts in large doses are extremely dangerous, and with the dosage not properly controlled a calamity from mishandling may cast a shadow on a very valuable proposition. The results obtained by the authors in the treatment of a large number of cases have been good. Of thirty-two cases of spring pollinosis (1915) only two had symptoms. Of fifty-two fall cases fifteen were definitely free from symptoms, twenty-five were markedly improved and twelve had their symptoms apparently in no way modified by the treatment, although it appeared that the attack took place rather later than in previous years.

New York Medical Journal

March 11, CIII, No. 11, pp. 481-528

80 Psychology of Physician as Wage Earner. C. W. Burr, Philadelphia.
81 Conservative Treatment of Tonsils. G. Hudson-Makuen, Philadelphia.
82 Removal of Troublesome Useless Uterus. A. E. Gallant, New York.
83 Curability of Chronic Urethritis. W. S. Reynolds, New York.
84 Sarcomas in Unusual Situations. H. A. Royster, Raleigh, N. C.
85 Spastic Paralysis in Children; Report of Seven Cases. J. Grossman, New York.
86 Standardization of Disinfectants. J. T. A. Walker, New York.
87 Therapeutic Value of Diathermia. A. C. Geyser, New York.

March 18, No. 12, pp. 529-576

88 Obscure Cases of Mastoid Involvement. E. B. Dench, New York.
89 Therapy as Related to Immunology of Tuberculosis. E. R. Baldwin, Saranac Lake.
90 Mental Deficiency. A. Gordon, Philadelphia.
91 Study of Drug Action. Anesthetics. T. J. Mays, Philadelphia.
92 Electrocardiograph. E. B. Krumbhaar, Philadelphia.
93 Large Congenital Hydronephrosis in Infant Six Weeks of Age. M. S. Kakels, New York.
94 Complete Separation and Anterior Luxation of Lower Epiphysis of Left Femur. U. S. Kahn, Binghamton.
95 Natural Radioactive Waters. W. H. Deaderick, Hot Springs, Ark.

Ohio State Medical Journal, Columbus

February, XII, No. 2, pp. 81-160

96 Responsibility Assumed in Nose and Throat Surgery. J. E. Brown, Columbus.
97 Arthritis Deformans from Surgical Standpoint. R. Carothers, Cincinnati.
98 Arthritis Deformans From Medical Standpoint. J. Phillips, Cleveland.

99 Proposed Plan for Reserve Surgical Corps for Regular Army. W. H. Snyder, Toledo.
100 Future of State Medicine. C. O. Probst, Columbus.
101 Dementia Paralytica, Within and Without State Hospitals. G. H. Williams, Columbus.
102 Scarlet Fever in Ohio. F. G. Boudreau, Columbus.
103 Medical Supervision in Public Schools From Standpoint of Country Practitioner. F. M. Hollingshead, Columbus.
104 Case of Juvenile Deforming Osteochondritis of Hip. J. L. Stevens, Mansfield.
105 Enforce Penalties for Violations of Law Requiring Birth Reports. M. W. Bland, Columbus.

Surgery, Gynecology and Obstetrics, Chicago

March, XXII, No. 3, pp. 251-378

106 *Operative Treatment of Pyloric Obstruction in Infants; Report of Sixty-Six Cases. W. A. Downes, New York.
107 *Adenomyoma of Round Ligament and Incarcerated Omentum in Inguinal Hernia, Together Forming One Tumor. T. S. Cullen, Baltimore.
108 Early Tuberculosis of Cervix. T. S. Cullen, Baltimore.
109 *Caudal Anesthesia in Genito-Urinary Surgery. B. Lewis and L. Bartels, St. Louis.
110 *Results of Operations for Exophthalmic Goiter. E. S. Judd and J. D. Pemberton, Rochester, Minn.
111 *Pancreatic Cyst as Cause of Unilateral Hematuria; Report of Case. J. Ransohoff, Cincinnati.
112 *Salpingitis Secondary to Appendicitis. J. E. Moore, Minneapolis.
113 *Ulcer of Jejunum; Report of Case. R. C. Bryan, Richmond, Va.
114 *Fracture of Neck of Femur. A. McGlannan, Baltimore.
115 *Induction of Labor in Normal Pelves at Term. C. B. Reed, Chicago.
116 Physiologic Method of Tendon Transplantation. L. Mayer, New York.
117 *Osteochondral Trophopathy of Hip Joint. A. T. Legg, Boston.
118 *Deaths Attributable to Intranasal Operations and Other Instrumentation. V. Dabney, Washington.
119 Some Features of Importance in Diagnosis and Prognosis of Urogenital Tuberculosis. J. F. McCarthy, New York.
120 Enlarged Thymus in Infancy; Report of Cases. J. F. Herrick, Ottumwa, Iowa.
121 *Compression Fracture of Lumbar Vertebrae; Report of Seven Cases. J. W. Sever, Boston.
122 Case of Double Urethra With Operation. D. W. MacKenzie, New York.
123 Case of Exstrophy of Bladder Operated on Nearly Thirty Years Ago. R. Winslow, Baltimore.
124 Implantation of Trigonum Into Segregated Lower End of Ileum. V. P. Blair, St. Louis.
125 Simple Modification of Old Vaginal Speculum. H. W. Hewitt, Detroit.
126 *Nitrous Oxid Oxygen Analgesia in Labor. W. C. Danforth, Evanston.
127 Pelvimeter for Measuring Pelvic Outlet. F. L. Adair, Minneapolis.
128 Self Retaining Bladder Retractor. J. C. Masson, Rochester, Minn.
129 *Local Application of Radium Supplemented by Roentgen Therapy. R. H. Boggs, Pittsburgh.
130 Causes, Mechanisms and Treatment of Flat Foot. W. J. Merrill, Philadelphia.

106 and 107. Abstracted in THE JOURNAL, January 15, pp. 215 and 216.

109. **Caudal Anesthesia.**—Ten of the 13 prostatectomies done by Lewis under caudal anesthesia needed no other anesthesia; 2 required a small amount of ether. One required complete ether anesthesia, there being no effect from caudal injection. Of the 68 cystoscopies, 46 gave excellent analgesia. Thirteen gave partial analgesia. Five gave no analgesia; 3 of these 5 failures the authors believe is due to faulty technic. One of the cystotomies (for calculus) gave good analgesia and the prostate could have been enucleated. One required a small amount of ether, as curettement of a carcinomatous mass was done. One case of external urethrotomy (perineal) gave complete analgesia. One rectal case (carcinoma) was a failure.

110. Abstracted in THE JOURNAL, January 8, p. 143.

111 and 112. Abstracted in THE JOURNAL, January 15, pp. 215 and 216.

113. **Ulcer of Jejunum.**—For four years Bryan's patient, a male, aged 48, had severe attacks of indigestion, increasing in frequency, characterized by violent cramps in the region of the stomach. Two years ago he had constant pain and nausea which continued for four months. He vomited constantly but he never noticed any blood in the vomitus. Washing out the stomach always made him feel better. The washings were green with yellow mucus. The pain would come on from two and one half to three hours after eating. Recently, in the last few months, there had been persistent pain and nausea, but no vomiting, although there was a constant desire to eat or drink something, and he had noticed that he could not eat very much at a given time. In September he was suddenly seized with a most agonizing pain in the abdomen and groins. This pain was unlike any that he had ever had before. He was found about an hour later in a collapsed condition. The picture was that of acute abdomen and the diagnosis of probable perforation of ulcer of the stomach was made. Operation was refused until seventeen hours after the onset of the trouble. Then on the anterior wall of the jejunum about 3 inches from the duodenojejunal juncture, a round punched out ulcer, the size of a cherry stone, was found. The patient's condition was desperate, no anastomosis could be made, purse string and invagination were impossible. A piece of omentum was plugged into the opening and several retaining catgut sutures sewed over it, the belly was irrigated with warm saline. A large drainage tube was inserted and a stab wound made into the pelvis. The patient died the next morning at 10 o'clock. Necropsy was refused.

114. **Fracture of Neck of Femur.**—The 55 cases reported on by McGlannan were treated by downward traction and internal rotation of the femur with the limb slightly flexed and widely abducted. The method of reduction and of fixation varied, but the essential principle was as stated above. For instance: I. Fixation in abduction by means of lateral wire splints and interrupted plaster bandages. II. Fixation in heavy plaster-of-Paris cast, extending from toe to nipple line on the fractured side and taking in the sound thigh for a short distance. III. Adhesive plaster traction in two directions (abduction and inward rotation). IV. Direct traction by means of ice tongs. V. Nailing the fragments. VI. Loose fixation by tying out the knees to a spreader attached to the bed rail. Seven patients cannot be traced. Of the remainder 17 are now dead and four are helpless, either on crutches or in wheelchairs as a result of the fracture. There are 46 recent and nine old fractures in the series. Thirty-six recent cases were treated and 10 were not. Of these 36 cases 4 patients died during the treatment, 13 were completely cured, 8 partially cured. In 3 cases sufficient time has not passed since the fracture to allow an estimate to be made. One patient is unimproved, 1 patient was seriously incapacitated by pain until her death six months after she left the hospital. Six patients cannot be traced, all of whom left the hospital in good condition, apparently cured. Of the 4 fatal cases, one patient developed uremic symptoms, restlessness and irritability, with occasional short periods of unconsciousness twelve days after the injury and died on the fifty-eighth day. A second patient died three days after fixation. In this case the examination of the urine before anesthesia did not indicate a kidney insufficiency. The third patient died on the twenty-ninth day, after a stormy illness. She was almost maniacal as a result of the use of alcohol and narcotics and finally died in uremia following two days of convulsions. The fourth patient died of edema of the lungs four days after fixation.

115. Abstracted in THE JOURNAL, Dec. 25, 1915, p. 2259.

117. **Osteochondral Trophopathy of Hip Joint.**—This term is suggested by Legg in place of Perthe's disease as being based on the actual pathology present. He has observed 55 cases. The following data are emphasized: Age of patients 2½ to 12 years. Appearance of a limp, with relation to a distinct traumatism in thirty-seven cases. Trochanteric prominence on the side affected in standing position; apparent visually and on palpation. Limitation in motion; marked in abduction; slight in internal rotation. Flexion free. No crepitation. Capsular thickening about the neck of femur. Slight muscular atrophy on side affected. Little or no pain either subjective or on manipulation. In general, little or no spasm. Trochanter slightly above Nelaton's line. Positive Trendelenburg generally present. Leg length equal with occasional variation either in shortening or lengthening. Von Pirquet negative. Tried in fifteen cases with positive results in three in which tuberculous adenitis was present. Wassermann and luetin tests negative. Tried in five cases without reaction. Family history negative. Patient's history

negative, except that the ordinary diseases of childhood had occurred in various individuals. There were no disease symptoms of any sort for a period of six months prior to the onset of the hip affection. No evidence of old rachitic condition. Duration from six months to a year, varying with the intensity of the attack. Typical Roentgen appearance consisting of an atrophied flattened epiphysis, either cap like or mushroomed in shape; hypertrophic thickening of the neck of the femur; an appearance of coxa vara. These modifications are persistent, but after the subsidence of the first attack, not progressive.

118. **Deaths Due to Intranasal Instrumentation.**—Two points are emphasized by Dabney: That the interior of the nose is both theoretically and practically a zone of considerable danger for even the slightest instrumental interference and that the indiscriminate use of epinephrin in this region is fraught with danger when used for operative assistance.

121. **Fracture of Lumbar Vertebrae.**—Four of the seven fractures reported by Sever were located in the upper lumbar segment and three in the lower. In such a small series, however, this does not prove anything except that where the injury is secondary to forces applied in flexion the probabilities are that the injury will be located at the point of greatest mobility of the spine, which is at first lumbar segment.

126. Abstracted in THE JOURNAL, January 16, p. 1270.

129. Abstracted in THE JOURNAL, Nov. 6, 1915, p. 1669.

Texas State Journal of Medicine, Fort Worth

February, XI, No. 10, pp. 515-572

131 Deep Roentgen Therapy in Unfavorable Surgical Situations. E. H. Skinner, Kansas City, Mo.
132 Treatment of Deep Seated Cancer by Roentgen Method. G. D. Bond, Fort Worth.
133 Hodgkin's Disease. J. B. Smoot and W. B. Carrell, Dallas.
134 Some Complications Following Abdominal Surgery. M. M. Walker, Wichita Falls.
135 Surgical Errors. J. E. Thompson, Galveston.
136 Obstetrics and Gynecology. C. P. Yeager, Corpus Christi.
137 Injuries to Infant Produced at Birth. C. R. Hannah, Dallas.
138 After-Treatment of Mother and Babe. L. Mackechney, Wichita Falls.
139 Lacerated Cervix. R. T. Goodwin, Sinton.
140 Correction of Chronic Uterine Displacements. J. M. Inge, Denton.
141 Use and Abuse of Tonsils. W. E. Connor, Cumby.
142 Removal of Knife Blade From Nose; Symptoms and Results. E. H. Vaughn, Tyler.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January, XX, No. 8, pp. 243-284

1 Roentgenography of Normal Parts. (To be continued.) A. McKendrick.
2 Movements of Colon. H. Walsham and W. Overend.
3 Method of Recording Radium Doses. W. C. Stevenson.

February, No. 9, pp. 285-320

4 Roentgenography of Normal Parts. A. McKendrick.
5 History of Electrotherapy. (To be continued.) H. A. Colwell.
6 Roentgenography in Gunshot Wounds of Skull. G. Vilvandré.
7 How to Measure Thickness of Wall of Roentgen Ray Tube. J. K. A. Wertheim.

British Medical Journal, London

February 26, I, No. 2878, pp. 297-332

8 *Epidemic Jaundice of Campaigns. W. H. Willcox.
9 Treatment of Toxic Jaundice Due to Tetrachlorethane Poisoning. W. H. Willcox.
10 *Treatment of Kala-Azar (Indian Form) by Tartar Emetic Intravenously and by Inunctions of Metallic Antimony. L. Rogers and N. H. Hume.
11 Attempts to Produce Safe and Effective Bacillus Dysenteriae (Shiga) Vaccine for Prophylactic Purposes. J. D. Thomson.
12 Dysentery Vaccination. A. Castellani.
13 Diagnosis of Abortive Cerebrospinal Meningitis. M. Culpin.

8. **Epidemic Jaundice of Campaigns.**—Jaundice, Willcox says, is of common occurrence among troops on campaign. In the present war jaundice has occurred among troops in almost all parts of the sphere of operations. The epidemic jaundice of campaigns appears to start as a gastro-intestinal infection, the inflammatory catarrh being most marked in the duodenum. At this stage pyrexia and a certain amount of toxemia occurs, but there does not appear to be a general blood infection usually, since blood cultures have generally been negative. A catarrhal cholangitis follows from spread from the duodenum, and marked jaundice now sets in, due to obstruction in the finer bile ducts. The jaundice is hepatogenous in type and does not appear to be associated with increased hemolysis of red blood corpuscles, anemia being absent. Fortunately, most cases do not progress beyond this stage, and the catarrhal condition subsides with clearing up of the jaundice. In very exceptional cases the infective condition may give rise to degenerative changes in the liver, and symptoms of icterus gravis will then supervene. Sometimes mild gastro-enteritis occurs in cases exposed to similar conditions; in many of them jaundice will develop, while in a few it will not. It is certain that the insanitary conditions inevitably associated with military campaigns play a most important part. Probably the infection is almost entirely gastro-intestinal in its mode of spread. As regards prophylaxis, careful attention to latrines, to prevent spread of infection by dust and flies is most important. Rest in bed in the early part of the disease should be insisted on. Careful dieting which will be mainly liquid is important. As regards medicines the following mixture has been given with advantage, three times each day:

		gm. or c.c.		
℞	Sod. bicarb.	1	3	gr. xx
	Potass. citrate	2		gr. xxx
	Sod. sulph.	2	or	gr. xxx
	Syrup. aurantii	4		ʒ j
	Aqua	32	ad	℥ j

Hexamethylenamin 10 grains three times a day in water, as a gastro-intestinal antiseptic seemed to do good in many cases.

10. **Treatment of Kala-Azar by Tartar Emetic.**—A 10 c.c. serum syringe is used by the authors and the median basilic or cephalic vein is selected. They began with only half to 1 c.c. of the 2 per cent. tartar emetic solution, but rapidly increased it to 3 or 4 c.c. and repeated the injection every two or three days, adding 1 c.c. at each injection up to a maximum of 10 c.c. if the patient had no marked gastric disturbance, in which case the dose may be reduced slightly for a time. In no case have any serious symptoms developed, although the large dose of 20 cg. has repeatedly been given. They now have no hesitation in advising the use of intravenous injections of tartar emetic as a routine method of treating kala-azar, beginning with 4 or 6 cg. on alternate days, and increasing by 1 or 2 cg. every other day up to a maximum of 20 cg., if the patient will tolerate as much. The treatment should be continued until the temperature has remained normal for several weeks with steady gain in weight, and the parasites are found to have completely disappeared from the spleen, and the leukocytes have been raised to about the normal level. In children and nervous female patients inunctions of antimony ointment, preferably in a strength of 10 per cent., is worthy of trial, although there is not yet sufficient evidence to decide how far this much simpler measure can be relied on.

Journal of Tropical Medicine and Hygiene, London

February 15, XIX, No. 4, pp. 41-52

14 *Dermatitis Cupoliformis. A. Castellani.
15 *Arneth Counts in Yellow Fever. J. W. S. Macfie.

14. **Dermatitis Cupoliformis.**—A peculiar nodulo-ulcerative condition of the skin affecting mostly Europeans in Ceylon, Castellani has called dermatitis cupoliformis or "tropical ecthyma." The disease begins with several superficial dusky red, not raised, slightly itching spots, which are generally follicular and perifollicular; they are, as a rule, situated on the feet and legs. The patient usually takes these spots for mosquito bites. Some of the spots disappear while others become slowly larger, raised, hard and infiltrated, without showing signs of vesication or pustulation, and very often, especially on the feet, somewhat cupoliform; they reach the size of a pea to that of a small cherry; there is no pustulation. After a time the center of the nodule breaks down and an ulcer forms with reddish fundus and often undermined edges.

These ulcerative lesions are somewhat painful and extremely slow to heal, complete spontaneous cure seldom taking place in less than ten to twelve months; on healing, patches of hyperpigmentation often remain. The condition is fairly common in young, strongly built European planters. If agar tubes are inoculated a streptococcus-like germ grows in pure culture from the nonulcerated lesions, while from the ulcerated lesions staphylococci and other germs may be grown, in addition to the streptococcus. This streptococcus is biologically different from all other streptococci Castellani has so far isolated in Ceylon from skin affections and systemic diseases of streptococcus origin. He named it *Streptococcus tropicalis* (1914). It is gram-positive, does not liquefy gelatin and does not produce indol.

15. **Arneth Counts in Yellow Fever.**—The Arneth counts collected in this paper by Macfie show that at the earliest phase of the disease there was found to be a very marked shift to the left of the Arneth count, the majority of the polymorphonuclear leukocytes being of the types included in Arneth's Class 1. In one case the index which was 87.0 on what was recorded as the third day of the illness, rose to 95.0 on the fourth day and was still as high as 90.5 on the fifth day. No data are available to show the effect on the Arneth count of the remission of the temperature which usually takes place on the third day. In fatal cases the Arneth index either remains very high, or mounts still higher as the disease progresses. In cases that recover, on the other hand, the index, after remaining high until about the seventh day, begins to fall rapidly and reaches a figure approximately to the normal about the tenth to the fifteenth day. Macfie believes that it is probable that there is nothing actually specific about the changes in yellow fever, and it may perhaps be anticipated that a similar profound shift to the left of the Arneth count will be found to be present in the early stages of other acute conditions accompanied by high fever and profound toxemia, such, for instance, as plague, etc. In the majority of such diseases, however, even in the early stage, there will be other signs and symptoms to aid the diagnosis; but in yellow fever in the mild attacks, and in the initial stages of the more typical forms of the disease, these are, unfortunately, often absent or of a negative character, and it is in such cases that the Arneth count may be of assistance in determining the nature of the infection.

Lancet, London

February 26, I, No. 4826, pp. 441-494

16 *Effects of High Explosives on Central Nervous System. F. W. Mott.
17 Clinical Thermometry: Continuous and Quasicontinuous Temperature Records in Man and Animals in Health and Disease. G. S. Woodhead and P. C. Varrier-Jones.
18 Paratyphoid; Its Clinical Features and Prophylaxis. W. H. Willcox.
19 Case of Ruptured Jejunum; Operation, Recovery. R. P. Rowlands.
20 Albuminuria and Trench Fever. F. G. Chandler.
21 Cicatricial Stenosis of Larynx Treated by Intubation. H. Barwell.
22 Case of Shell Concussion; Treatment by General Anesthesia. G. de H. Dawson.
23 Case of Tetanus Occurring in Soldier Two Months After Being Wounded. D. P. Penhallow.

16. **High Explosives and Central Nervous System.**—Out of 156 cases in which a previous history is reported, Mott says, fifty-two gave a history of either a previous nervous breakdown or a timid disposition, easily frightened, emotional, or afraid of the sight of blood; in a few the fact was elicited that they had had a fright in early childhood and that this recurred in dreams. Some gave a history of a neuropathic tendency or inheritance. So that all the evidence goes to prove that an acquired or inborn tendency to neurosis plays an important part in the effects on the central nervous system of exposure to shell shock in a majority of the cases. Mott has been studying for ten years the subject of hereditary predisposition of epilepsy and insanity, and the several hundred pedigrees which he possesses make him certain that of all nervous diseases epilepsy is the one in which an inborn tendency is shown more than in any other nervous affection. Shock may be a potent, exciting, or aggravating cause; "shell shock" is not per se the cause of epilepsy in the majority of cases.

Bulletin de l'Académie de Médecine, Paris

February 15, LXXV, No. 7, pp. 155-202

24 Improved Technic for Closing Gap in Skull. (Restauration des pertes de substance cranienne, par rabattement d'un volet ostéopériostique taillé aux dépens de la table externe d'une région du crâne contiguë.) Mayet and Bazy.
25 Detection of Picric Acid in the Urine. (Sur la recherche des dérivés picriques dans les urines.) L. Grimbert.
26 Measures for Native Infant Welfare in French Colonies. (Protection de l'enfance indigène dans les colonies autres que l'Algérie, le Maroc et la Tunisie.) Kermorgant.
27 *Paratyphoid Involvement of Bronchi or Lungs; Seven Cases. (Congestions pulmonaires à bacilles paratyphiques.) J. Minet.
28 Nitrogen Content of Typhoid Stools. (L'élimination fécale azotée dans la fièvre typhoïde.) R. Mercier.

27. **Paratyphoid Involvement of Bronchi or Lungs.**—Minet found paratyphoid bacilli in the sputum in a case of intercurrent bronchitis and one of acute congestion of the lungs, but complete recovery soon followed. In two other cases the lung trouble ran a chronic course with intermissions during which the bacilli were very scanty in the sputum. They were of the A type in one and B type in the other, and the lung trouble dragged along for months with progressive emaciation resembling that of chronic consumption. The paratyphoid bacilli were found in pure cultures in the sputum of each. Both men recovered finally after months in the hospital during which no treatment displayed any appreciable efficacy. In another group the paratyphoid lesion seemed to be restricted to the apex, simulating a tuberculous process, and keeping up for months the picture of acute phthisis.

Journal de Médecine de Bordeaux

February, LXXXVII, No. 4, pp. 63-84

29 Epileptic Sentinel Abandons Post. (Abandon de poste en présence de l'ennemi dans une fugue épileptique.) H. Verger.
30 War Typhoid. (La fièvre typhoïde du combattant.) J. Carles.
31 Trophic Disturbances in the Nails Consecutive to Injury of the Median Nerve and Brachial Plexus. J. Vergely.
32 Treatment of Gunshot and Shell Wounds of the Nose and Vicinity. (Les blessures du nez, des fosses nasales et des cavités accessoires en temps de guerre.) G. Canuyt.

Archiv für Verdauungs-Krankheiten, Berlin

November, 1915, XXI, No. 5, pp. 335-420

33 *Roentgenoscopy of the Stomach with a Flexible Probe. (Ueber Röntgenuntersuchungen des Magens mittels einer Tastsonde.) G. Kelling.
34 *Functional Disturbance in the Liver in Constitutional Asthenia. R. Uhlmann.
35 Improved Technic for Sigmoidoscopy. (Ein modifiziertes Sigmoskop.) E. Münzer.
36 *Feeding by the Rectum. (Untersuchungen über die Rektalernährung.) E. Begtrup (Copenhagen).

December, No. 6, pp. 421-538

37 *Present Status of Gastric Cancer. (Ergebnisse neuerer klinischer Erfahrungen über Magenkarzinom.) E. Schütz.
38 Hernia of Stomach and Omentum Through the Diaphragm. (Zwerchfellhernie des Magens und grossen Netzes, mit Bericht über einen Fall von angeborener Hernie deren Sack mit Inhalt in die rechte Brusthöhle wanderte.) M. S. Kakels and S. Basch (New York).
39 *Evacuation of the Stomach in Connection with the Acidity. (Azidität und Entleerung. Untersucht mittelst Dauermagensonde und Durchleuchtung.) E. Egan.
40 What Medicine Can Learn from Philology. (Nahrungsbedürfnis und Sprache.) W. Sternberg.

33. **Flexible Probe for Roentgenoscopy of the Stomach.**—Kelling enumerates a number of the disadvantages of the usual bismuth test meal as a means of investigating conditions in regard to the stomach. He emphasizes particularly that when the stomach walls are incapable of a motor reaction to the bismuth suspension, it lies like a dead weight in the lowest part and gives no information as to the other parts of the organ. The shape of the atonic stomach is determined by the static conditions in the abdominal cavity outside, but investigators are liable to disregard this. It would be of great assistance if the patient were placed for roentgenoscopy on an adjustable table so that the head and feet could be lowered in turn and the body turned from side to side. He gives an illustrated description of a flexible, ball-tipped opaque probe which can be drawn along the inner wall of the stomach, and thus outline it with precision. The ball at the tip is hollow and an opening on the proximal side scoops up scraps of tissue. The probe is so light and flexible

that it follows every unevenness in the stomach wall. Two days beforehand he examines the stomach with the bismuth suspension and gives a purge afterward. The introduction of the probe is directly preceded by inflation of the stomach with air.

34. **The Liver with Constitutional Asthenia.**—Uhlmann remarks that in the study of the habitus asthenicus—the constitutional inferiority of the various organ systems, Stiller's constitutional asthenia—various organs have been discussed in turn but the liver functioning seems to have escaped special study from this standpoint. He here presents a contribution in this line, reporting the findings with the galactose or levulose tests or both applied to 19 patients, typical examples of asthenia. Among 42 normal persons tested, only 2 responded positively to the galactose test, while 10 of the 19 with constitutional asthenia gave a positive response. The standard test was with 30 gm. galactose. The results obtained justify the assumption that this test will reveal functional insufficiency on the part of the liver in many persons apparently sound. The slight impairment of liver functioning may be due to constitutional physical inferiority or to a functional neurosis or thyroid disturbance or other cause. Maliwa reported in 1914 some cases of orthostatic albuminuria with galactosuria, while corresponding cases of true chronic nephritis responded negatively to the galactose test. Uhlmann had likewise a patient with orthostatic albuminuria and galactosuria who was at the same time a typical example of constitutional asthenia. This case sustains the assumption that the asthenia, and nothing connected with the kidney, was responsible for the positive response to the galactose test.

36. **Feeding by Way of the Rectum.**—Begtrup presents evidence to show that milk and eggs in nutrient enemas cannot be absorbed and eliminated, theoretically speaking. Native albumins are not absorbed as such, coagulable albumin being scarcely able to pass through an animal membrane, while there are no active digestive ferments in the lower bowel. Hence Begtrup experimented with farther digested substances, meat amino-acids and milk amino-acids, with sugar, a large proportion of which seems to be absorbed. Sugar irritates the intestinal mucosa so that the amount has to be kept low. The patients had all had hemorrhage recently from the stomach or bowel, and had been given nothing by the mouth for from two to seven days. Then the nutrient enemas were commenced and the metabolic findings systematically tabulated. Two or three nutrient enemas were given each day, diluted with water to 200 or 250 c.c. and introduced as high in the bowel as possible. The tabulated metabolic findings show a decided increase in the amount of nitrogen eliminated in the urine during the amino-acid enema period.

37. **Gastric Cancer.**—Schütz here presents his conclusions from the study of 222 cases of malignant disease of the stomach since 1908 and of 165 before that date. He thinks that abuse of alcohol is probably responsible for the preponderance of men over women; in his series, 68 to 32 per cent. The youngest patient was a woman of 26; 13 were over 70; 15 between 30 and 40 and 103 between 50 and 60. No free hydrochloric acid was found in 90 per cent. of the 197 tested for the acidity. This 90 per cent. is the highest figure of any series yet published, and emphasizes the importance of subnormal acidity in diagnosis of cancer. In none of the total number was there hyperacidity, and in the 17 with free acid it was well within modest range. Schütz emphasizes, however, that anacidity can be regarded as a sign of cancer only when it is a question of early differentiation of cancer. He found anacidity in only 7.4 per cent. of 830 cases of noncancerous stomach affections, but anacidity is liable to accompany chronic infectious disease, such as tuberculosis, and certain metabolic derangements as with the uric acid diathesis, etc. The anacidity here is not the consequence of the concomitant anemia—with the exception of pernicious anemia and leukemic states. Deficient production of hydrochloric acid seldom occurs with anemia, even extreme. The anacidity is evidently the result of some profound derangement, probably from the injurious influence of certain products of the abnormal metabolism. It is possible that a similar profound upset is responsible for the anacidity with gastric cancer, instead of local conditions. Skray found in some cases of simple achylia and subacidity that hydrochloric acid appeared in the stomach content after meat was added to a test breakfast, while with cancer no acid appeared. Schütz found in 16 cases that the stomach content had a putrid odor, a reliable sign of a neoplasm undergoing decay at some part. In 57 per cent. the evacuation of the stomach proceeded normally or overhastily. In 130 cases, the Roentgen findings were suggestive of malignant disease in 100, but in 84 of these the diagnosis was certain otherwise; in 30 the Roentgen findings testified against cancer, but the findings otherwise in 25 cases rendered cancer certain. In 16 cases the cancer was disclosed by the Roentgen findings alone. Lactic acid was demonstrated in 33 per cent., exclusively with cancers obstructing the outlet. His conclusion is that the diagnosis of malignant disease of the stomach in its earliest phases is practically an impossibility. We will succeed in diagnosing it more frequently when we make a practice of applying the various tests early in stomach trouble of any kind.

39. **Retention Stomach Tube as Aid in Study of Stomach Functioning.**—Egan's research was done at the Central Roentgen Institute at Vienna, in charge of Holzknecht. He found that the combination of retention stomach tube and roentgenoscopy afforded amazing insight into the functioning of the stomach. Experiments with administration of hydrochloric acid or soda given to twelve healthy persons and five with various stomach affections showed that the acid did not retard nor the soda hasten the evacuation of the stomach. Neither the acid nor the alkali seemed to affect the peristalsis in any way. With the retention stomach tube in place for several hours, stomach content can be aspirated every five or fifteen minutes and the chemism of the stomach traced from step to step. The stomach tube found most instructive for the purpose was a little stronger and stouter than the Einhorn duodenal tube, and has a metal olive on the tip and four opaque bars. The 200 c.c. of bismuth suspension is poured in through the tube.

Berliner klinische Wochenschrift

February 14, LIII, No. 7, pp. 153-176

41 Treatment of Mild Prurigo. (Entstehung und Beseitigung des Juckens. B. Behandlung des Prurigo mitis.) P. G. Unna. To be continued.

42 War Disturbances in Voice and Speech. (Stimm- und Sprachstörungen im Kriege und ihre Behandlung.) H. Gutzmann.

43 Operative Treatment of Irreparable Radial Paralysis. (Radialislähmung.) G. Axhausen.

44 *Roentgenotherapy of Superficial Skin Disease. (Röntgentherapie oberflächlicher Dermatosen.) E. Kuznitzky.

45 *The War Literature on Internal Medicine. P. Reckzeh. Concluded in No. 8.

44. **Roentgenotherapy of Superficial Dermatoses.**—Kuznitzky found that it is unsafe to apply the Roentgen rays without a filter in treatment of eczema and psoriasis. With the latter affection special care is necessary to avoid falling out of the hair.

45. **The War and Internal Medicine.**—Reckzeh reviews the publications of various internists on their experiences with the troops on active service. He mentions among others Schmidt's observation that men with acute polyarthritis frequently had a history of a preceding diarrheic trouble. In other cases there was a hisfory of recent tonsillitis. The febrile rheumatism was generally mild and the joints affected were almost exclusively those in the legs. Dennig advocates systematic removal of all projectiles in the tissues, and Reckzeh agrees with him that the health of a lead carrier may suffer at some time from the presence of the projectile and a claim for an indemnity might not be entirely unjustified. In regard to infectious diseases in general, he endorses Schleich's view that the milder onset and course of many infectious diseases in this war is due primarily to a modified *genus epidemicus* and only secondarily to the prophylactic and therapeutic measures that have been introduced. Reckzeh says of epidemic meningitis that the corroborating testimony from various lands is that serotherapy is proving

brilliantly successful. The mortality has dropped from 70 or 80 per cent. to 15 or 20 or even lower. He cites Moser's denial of the probability of a primary contact infection as the cause of a certain epidemic of mumps among the soldiers. As contact infection could be almost positively excluded under the circumstances, the food or drinking water or dishes must be incriminated.

Testimony is accumulating as to the harmlessness and efficacy of vaccination against cholera. The term dysentery does not correspond to any special anatomic findings nor to any special causal factors, but Quincke emphasizes that treatment in every case should proceed on the assumption that the case is infectious. Rumpel believes that fully 50 per cent. of the troops in Belgium and northern France are infected with the Flexner dysentery bacillus, but it seems to be pathogenic for only a comparatively few. In treatment of dysentery a combination of kaolin and calomel proved useful in Wiener's hands. The consensus of opinion is all in favor of the value of kaolin in treatment of all infectious and noninfectious intestinal affections of a diarrheic nature, but Leschke lauds animal charcoal as still better. Soldin's is the only voice raised in opposition. He declares that recovery from dysentery under dietetic measures alone is as prompt as under kaolin, bismuth or tannin. The abnormal course of typhoid under the conditions of war is emphasized by Reckzeh, who cites numerous writers. Boral has encountered eleven cases of typhoidal abscess in the abdominal walls. A number of cases of typhoidal parotitis have also been reported, displaying a tendency to drag along.

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 19, XLVI, No. 8, pp. 225-256

46 Successful Operative Case of Mesenteric Cysts. E. Monnier.
47 Hair Dyes. (Ueber Haarfärbemittel.) L. Merian.

Deutsche medizinische Wochenschrift, Berlin

February 17, XLII, No. 7, pp. 181-212

48 *Treatment of Disease of the Mouth in Infants. (Behandlung der Erkrankungen der Mundhöhle des Säuglings.) Peiper.
49 Dysentery Among the Troops on Active Service. (Zur Epidemiologie und Bekämpfung der Ruhrerkrankungen im Felde.) J. Koch.
50 Wounds of the Urogenital Apparatus. (Kriegsverletzungen des Urogenitalsystems.) Stutzin and Gundelfinger. To be continued.
51 Some Field Operative Statistics. (Statistisches über 222 kriegschirurgische Eingriffe.) Stutzin and Diesing.
52 *Cachexia from Destruction of Pituitary Body. (Ueber Kachexie hypophysären Ursprungs.) M. Simmonds.
53 Technic for Thorium Exposures. (Eine Bestrahlungsmethode mittels Thorium X.) F. Nagelschmidt.
54 Synthetic Oxytocics. (Ueber synthetisch hergestellte Wehenmittel.) F. Jaeger.
55 Apparently Healthy Boy of Four With Sexual Development of Youth of Seventeen. (Ueber vorzeitige Geschlechtsentwicklung.) K. Ohmann.
56 Panoptic Staining of Dry Blood. (Panoptische Färbung von Blutrockenpräparaten und Panarithmische Kammerfärbung.) G. C. van Walsem (Holland).
57 High Salt Content of Sweat Under Hot Sun. (Chlor- und Stickstoffgehalt des Schweisses.) C. Kittsteiner.

48. **Disease of Infant's Mouth.**—Peiper is inclined to regard infectious processes in the mouth of an infant as of graver import even than infection of the umbilicus. Finkelstein found that of 100 infants with pronounced stomatitis, 24 per cent. of the deaths were due to causes connected with the mouth trouble. The earlier it develops the more serious for the child. All affections of the mouth hinder the child from nursing properly, and not only the child but the breast and the composition of the milk suffer in consequence. If the mouth trouble is not discovered, ill advised measures may be adopted as the child's nonthriving is ascribed to erroneous causes. So much injury may be done to the tissues of the infant mouth by wiping it out, that Peiper insists that no attempt should be made to clean an infant's mouth before it gets teeth. The mouth of a young infant should be scrupulously let alone. If it is absolutely necessary for therapeutic purposes to wash out the infant's mouth, it should be done by the physician himself or by the mother under his careful directions. He mentions that it was remarkable how the mouth affections of infants dropped off at once as soon as the official decree went forth (1912) that midwives must not wipe out infants' mouths. Prophylactic hygiene of the mouth should begin only when there are teeth to catch and hold particles of food between them. Everything that goes into an infant's mouth should be scrupulously clean; the nipple and space around should be cleaned with a rag and boiled water or 1 per cent. boric acid solution; the bottle nipple likewise, and the temperature of the milk should never be tested directly by the adult mouth. The nipple should be rinsed, washed with salt, rinsed again and kept dry. Toys should be not merely washable but should be actually washed every day. Catarrhal stomatitis generally heals on removal of the mechanical cause. If local treatment is necessary, the lesions can be dabbed once or twice a day with a 2 per cent. solution of silver nitrate or boric acid or a 20 per cent. borax glycerin or a solution of a teaspoonful of hydrogen dioxid in a glass of water. The latter must be prepared fresh every day. Thrush may be healed by dusting the lesions with finely pulverized boric acid mixed with one-fifth its bulk of saccharin. Escherich gave the child a sugar-teat with the cotton inside the gauze covered with boric acid, the whole dipped in a glass of boiled water containing a little saccharin. The objection to this is that it seems to officially sanction the use of the sugar-teat. To keep the child nourished may require patience and ingenuity, possibly feeding breast milk with a spoon. Gonococcus stomatitis of the newly born may be hastened to disappear by the 2 per cent. silver nitrate solution. For noma he recommends prompt excision into sound tissue, with cauterization, without wasting time on local medication.

52. **Cachexia of Pituitary Origin.**—Simmonds reports two more cases, supplementary to one he published two years ago, in which the only cause discovered at necropsy for a chronic and fatal cachexia was the total destruction of the hypophysis cerebri. In one case the destruction was the result of an old embolic process; in the others of a tumor growth. These three cases justify tentative pituitary treatment in cases of progressive cachexia without other known cause at almost any age.

Jahrbuch für Kinderheilkunde, Berlin

February, LXXXIII, No. 2, pp. 97-176

58 *Alimentary Anemia in Young Children. (Ueber alimentäre Anämie und ihre Stellung unter den Anämien des Kindesalters.) H. Kleinschmidt. To be continued.
59 *Elimination of Diphtheric Membranes During Intubation. (Können Pseudomembranen durch die O'Dwyer-Tube eliminiert werden?) J. Von Bokay.
60 *Influencing Growth of Tadpoles by Feeding Thymus and Genital Gland Tissue. (Beeinflussung des Wachstums von Kaulquappen durch Verfütterung von Thymus und Geschlechtsorganen.) E. Stettner.

58. **Successful Dietetic Treatment of Anemia.**—Kleinschmidt remarks that in these days of splenectomy and radiotherapy and other extreme measures in treatment of anemia, it comes as a surprise to read of gratifying success in treatment of a large group of anemias with dietetic measures alone. He declares that there is no evidence to date that inadequate nourishment is able to entail anemia. The whole blood may atrophy, proportional to the atrophy of other tissues, but there are no morphologic changes in the blood, and the hemoglobin and reds keep their proportional figures. Von Hösslin kept a puppy on a third of the food given its mate, but even after eighteen months there was no actual anemia. Further experimental research has shown that addition of iron to milk makes it a complete food for growing dogs, thus warding off anemia. But when the animals are fully grown, the addition of iron does not promote the regeneration of the blood after venesection. Children kept too long on milk do not get enough iron, and their hemoglobin percentage is low although the blood is otherwise approximately normal. Some constitutional anomaly may require mixed food instead of a too exclusive milk diet. This change to a mixed diet seems to be effectual also when the anemia is accompanied by enlargement of the spleen, whatever the cause of the enlargement may be.

The one criterion for the alimentary nature of the anemia in these cases has been the improvement under the changed diet, but Kleinschmidt here announces that his study of the

subject in forty-five cases has demonstrated a number of points by which this form of anemia can be recognized from the start. Improvement has never failed to follow appropriate dietetic measures in his experience. The children were from 3 months to 5 years old, but the majority were at the end of the nursing period. A number were of the abnormally nervous type, others were typical examples of the exudative diathesis, with or without enlarged spleen, lymphoid organs and tonsils. In a number of the children the enlargement of the spleen had been noticed before the tendency to anemia developed. The spleen was abnormally large in 35 of the 45 children, including 10 with extreme splenomegaly. Rachitis was evident in 27 of the 34 children over 7 months and under 2½ years old. The enlargement of the spleen was manifest in a number of the children as early as the third or fourth month, long before rachitis or the exudative diathesis became otherwise apparent. These children presenting alimentary anemia frequently have some minor deformity or other sign of degeneracy, hernia, flatfoot, deformed ears, etc. They may be of a fat or lean type, but all are weak and flabby, although most of them seem to be well nourished except that the fat type has a yellowish tinge to the complexion and the lean type a pallid white tinge. In both types the mucous membranes and the ears are pale. The liver is frequently large and soft, while the enlarged spleen is often quite hard. The urine was normal; the blood looked thin and bright colored, with hemoglobin range between 20 and 55 per cent. although the reds averaged five million, only in 20 per cent. were they below four million. This discrepancy between the hemoglobin percentage and the numbers of reds is characteristic. If there is hyperleukocytosis some infectious complication may be surmised. Uncomplicated alimentary anemia is characterized by predominance of mononuclears, especially lymphocytes. Necropsy usually reveals infiltration of the myocardium. It is evident that this occurs frequently, but must retrogress completely in the cases with recovery. Necropsy further shows deposits of hemosiderin in liver and spleen. This important finding points to destruction of the blood as a factor in this alimentary anemia. It can be estimated and traced by the urobilinogen content of the stools.

Among his 45 cases, in 8 the anemia was pronounced before the seventh month, and 5 with only 20 or 25 per cent. hemoglobin died, while 3 with 33, or 30 per cent., were saved. The trouble was evidently alimentary anemia from extreme constitutional inferiority. Addition of small quantities of vegetables, egg, apple sauce, etc., did not arrest the progressive anemia. The 45 children were all bottle fed, but this alimentary anemia has been noted in exclusively breast fed children. His treatment consisted in excluding milk from the diet as much as possible. Only four feedings were allowed except to the youngest of the infants. Vegetables and meat took the place of milk. The first meal was 100 gm. milk diluted with 100 gm. flour gruel or malt coffee with softened zwieback or bread, a little butter or marmalade. The second meal was fresh fruit with bread, crackers or zwieback softened in water and given with crushed banana, apple, plum or raspberries. The third meal was soup with rice or oatmeal or mashed potato, some vegetable, and one or two tablespoonfuls of meat. This meal was repeated for the fourth meal, with, for the older children, bread and butter, meat and fruit. The vegetables are all mashed soft and the meat chopped fine. As infants are unable to chew, he gives them liver or sweetbreads, slightly cooked and forced through a sieve. Calves' and chicken livers are best; beef liver and lungs can be used but are less effectual. This dietary permits great variety but the above small amount of milk must never be surpassed, and it should be allowed only for the first feeding. Very little fluid is allowed. If milk and fluid beyond what the above menu calls for are given, the child is unable to take the vegetables in sufficient amounts to correct the anemia.

The principle is not to give the vegetables, etc., along with the milk, but to give them instead of milk. When the children refuse the above menu and clamor for milk, the only way to coerce them may be by a change of nurses, a strict nurse instead of the mother, or by taking the child to the hospital. The unwonted diet may set up diarrhea in the nervously disposed, requiring a modification of the menu and postponing the improvement. No drugs were ever found necessary. Some of the children had been taking iron but without benefit. The victory over the anemia usually takes from two to six months but it may be longer than this before the spleen subsides to normal size. The clinical picture of alimentary anemia suggests toxic action, and Kleinschmidt is convinced that it is the milk, and in particular the fat in the milk, which in certain constitutionally inferior children has a destructive action on the blood.

59. **Elimination of Diphtheric Membranes During Intubation.**—Von Bokay gives illustrations of false membrane casts over 3 cm. long coughed up through the O'Dwyer ebonite tube in five cases. In one case a boy of 3 coughed up six casts, nearly all over 3 cm. long, through the tube. Intubation was required for only forty-four hours.

60. **Influence of Growth by Feeding Endocrine Glands.**—Tadpoles were fed with beef thymus tissue, with beef genital gland tissue or thyroid, separately or in various combinations. The research was along the same lines as that described recently in the editorial in THE JOURNAL, Feb. 19, 1916, p. 576. Stettner's various series of experiments are described in detail. Most of the glands with an internal secretion seemed to have a retarding action on the development of the tadpoles, delaying the metamorphosis into frogs. Thyroid tissue alone seemed to have the opposite effect. The significant fact was noticed that while thymus and genital gland tissue separately each retarded metamorphosis, given together, the tadpole developed normally. The thymus and genital gland substance seem thus to supplement each other, their combined action being necessary for normal growth.

Münchener medizinische Wochenschrift, Munich

February 15, LXIII, No. 7, pp. 225-268

61 *To Bridge a Gap in a Nerve. (Ueber die Vereinigung getrennter Nerven. Grundsätzliches und Mitteilung eines neuen Verfahrens.) L. Edinger.

62 Scarlatiniform Tardy Exanthem After Vaccination Against Typhoid and Cholera. W. Frieboes.

63 *Fulminating Sepsis Following Pyelography. (Ueber eine Gefahr der Pyelographie.) M. Simmonds.

64 Arsenic Keratosis or Mercury Exanthem? C. Philip.

65 Official Directions for Prophylaxis of Epidemic Cerebrospinal Meningitis. (Die amtsärztliche Bekämpfung übertragbarer Krankheiten. III. Genickstarre.) M. Henkel.

66 Spectacles for Roentgen Work. (Die Adaptationsbrille, ein Hilfsmittel für Röntgendurchleuchtungen.) W. Trendelenburg.

67 Localization of Foreign Bodies in the Tissues. (Fremdkörperlokalisation mittelst einer Durchleuchtung und einer Aufnahme.) A. Kautzky Bey.

68 Acute Dilatation of the Heart in Soldiers. (Zur Frage der akuten Herzerweiterung bei Kriegsteilnehmern.) H. Dietlen.

69 Value of Anticholera Vaccination. (Erfahrungen über den Wert der Choleraschutzimpfung.) Z. v. Ajkay.

70 Treatment of Grazing Wounds of the Skull. (Behandlung der Schädeltangentialschüsse.) V. Florschütz.

71 Treatment of Wounds of the Testicles. (Zur Behandlung der Hodenschüsse.) Levy.

72 *Perforation of Ulcerated Paralyzed Bladder from Manual Expression of Contents. (Zur manuellen Expression der Blase bei Rückenmarksverletzungen.) F. Erkes.

73 War Orthopedics. (Kriegsorthopädie in der Heimat.) G. Hohmann, F. Lange and F. Schede. Concluded in No. 8.

74 Importance of Baths in Treatment of Suppurating Wounds in War. (Anwendung von Bädern zur Heilung von eiternden Schussverletzungen und deren Folgen.) O. Küttner.

75 Febrile Temperature as Objective Sign of Rheumatism in Soldiers. (Ueber Kriegsrheumatismus.) M. Matyas.

61. **To Join the Stumps of a Severed Nerve.**—Edinger cites authorities and personal experiences to show that regenerating nerve fibers are easily mechanically turned aside and thus miss connection with the other stump. Even an interposed segment of nerve tissue may act as a foreign body to turn the fibers aside. His experiments have apparently demonstrated that the regenerating nerve fiber is like a jet of a thick fluid at first. This explains why it is so readily turned aside by a clot of blood, nerve tissue implant, etc. On the other hand, it pushes readily into a soft jelly and forges ahead. In order to keep the fibers pointed in the right direction, they must grow in a tube or tunnel of some kind. These conditions he meets by bridging the gap in the nerve

with an artery filled with agar jelly; 100 of these tubes have now been distributed to various operating neurologists. Ludloff bridged the gap in this way with the jelly tube in fourteen cases. The gap measured from 5 to 15 cm. and in every case there are already evidences that the nerve is regenerating, as Edinger describes in detail. In two or three weeks there was formication in the previously anesthetic area and the extent of the anesthesia became much reduced. In one case, after 10 cm. of the tibial and 8 cm. of the popliteal had been resected and the gaps bridged with the jelly tube, the plantar reflexes returned in sixteen days.

63. **Dangers of Pyelography.**—Simmonds reports a further case of death following pyelography, which he ascribes to septic infection. The man of 34 had 15 c.c. of a 5 per cent. solution of the silver salt injected as usual into the right kidney pelvis for pyelography on account of vague symptoms from this kidney. Afterward there was a transient feeling of oppression in the organ and a little vomiting that evening. By the next day the patient had no further disturbances except a slight painfulness in the kidney region, and the urine was slightly tinged with blood. The temperature began to go up in the evening and the following day there was a hemorrhagic exanthem, with high fever and anuria, and death the third day after the pyelography. Necropsy showed streptococcus sepsis and disclosed erosions in the ureter caused by the catheterization, which had opened a way for the streptococci into the blood. Whether the streptococci were from the bladder or the urethera is not known, but they were evidently carried up and into the tissues by the collargol which did not have bactericidal power enough to render them harmless. Roessle has reported a similar case, but he ascribed the fatality to silver poisoning from the silver salt getting into the erosions. Simmonds insists that fulminating sepsis is a much more plausible explanation. The cases warn that when infectious germs are known to be present in the lower urinary passages, pyelography had beited not be attempted.

72. **Manual Expression of the Bladder.**—In the case described there was complete sensory and motor paralysis of the bladder following a shell wound of the spine. The bladder was emptied by compression from without and the man soon succumbed to the consequences of perforation of an ulcer in the bladder. This method of emptying the bladder is thus shown to be fraught with danger except at the very first, before there is any inflammation in the bladder wall.

Wiener klinische Wochenschrift, Vienna

February 17, XXIX, No. 7, pp. 185-216

76 Mechanism of Morning Remissions in Fever. (Fieberstudien. I.) P. Saxl.

77 *Chronic Bacilli Carriers Cured With a Homologous Vaccine. (Die Befreiung der Bazillenausscheider von ihrem Uebel durch Behandlung mit homologem Impfstoffe.) W. Karell and F. Lucksch.

78 War Neuroses. (Zur militärärztlichen Konstatierung der Kriegsneurosen.) S. Jellinek.

79 Direct Seroiherapy of Epidemic Meningitis. (Ueber die Behandlung der epidemischen Genickstarre mit epizerebralen und intrakameralen Seruminjektionen.) K. Lewkowicz. To be continued.

80 Trench Neuritis of the Legs. (Ueber namentlich in den Unterschenkeln lokalisierte Schmerzen nach Beobachtungen im Frontbereiche.) H. v. Schrötter.

81 Experimental Research on Cancer. IV. (Weitere kritisch-experimentelle Studien zur Chemotherapie des Krebses.) S. Fränkel and E. Fürer.

82 Diagnosis and Management of Stomach Trouble in Soldiers.' (Diagnostik und Therapie bei magenkranken Militärpersonen.) A. Fischmann. Commenced in No. 6.

77. **Effectual Vaccine Therapy of Bacillus Carriers.**—Karell and Lucksch expatiate on the annoying problem afforded by the soldiers who are left chronic carriers after typhoid or dysentery, and thus are a constant source of danger for the regiment. As the men feel well, they disregard the precautions to which they are admonished. It has even been suggested that a regiment should be formed exclusively of chronic carriers. Karell and Lucksch noticed that a chronic dysentery bacillus carrier responded with a febrile reaction to a prophylactic antityphoid vaccination, and thereafter ceased entirely to eliminate dysentery bacilli. This sudden and complete cure of his "carriership" led to further experiments in this line. They had chronic carriers sent to them from other hospitals and here report that with injection of a homologous vaccine the bacilli promptly disappeared from the stools in thirty-five of the forty-two men thus treated and the other seven are still under treatment. The injection had to be repeated in a few of the men.

Policlinico, Rome

February, XXIII, Medical Section, No. 2, pp. 33-64

83 *The Residual Nitrogen in the Blood is Dependent on Liver Functioning. (L'azotemia nell'insufficienza epatica. Studio clinico e fisiopatologico.) P. Pozzilli.

84 Pathogenesis and Etiology of Acromegaly. R. Massalongo and C. Piazza. To be continued.

85 Some Color Reactions of Quinin. (Sulla reazione che da la chinina trattata con acqua di cloro ed ammoniaca molto diluita.) A. Baldoni.

83. **Residual Nitrogen in the Blood with Liver Disease.**—Pozzilli has been applying various tests to forty-two persons to ascertain the effect on the composition of the blood of defective functioning on the part of the liver. He studied in particular the functional capacity of the liver for the production of urea, having been impressed by the coincidence of severe liver disease in a number of patients with pronounced azotemia, that is, excess of nitrogenous bodies in the blood. He tabulates the findings in regard to the total nitrogenous bodies in the serum, the proportion in the form of urea, and the proportion of the noncoagulable nitrogen, the residual nitrogen, classifying separately the 4 normal persons, the 4 with kidney disease but apparently normal liver, the 6 with heart disease plus liver disturbance, 18 with various forms of liver disease, and 10 with respiratory affections, arteriosclerosis or diabetes. The nitrogen coefficient and the automatic regulation of nitrogen balance fluctuate with the intake of nitrogen. The coefficient may further prove misleading in case of coincident kidney and liver disease, the kidney lesion masking the liver derangement as the former tends to send up the azoturic coefficient while the liver disease tends to depress it. He emphasizes therefore that not the modifications of the azoturic index are significant as to liver disease but the fluctuations in the residual nitrogen. This is affected but little by the food and by the permeability of the kidneys. The proportion of residual nitrogen in the serum depends on the functional capacity of the liver. In health it does not seem to be found in the serum in a proportion higher than 1 per cent. This proportion grows larger when the liver is not working properly, and hence it serves as a simple and reliable index of liver functioning. In short, he declares, azotemia is a well defined syndrome and the residual nitrogen in the serum bears the same relation to liver functioning that the urea nitrogen in the serum bears to kidney functioning. In conclusion he mentions that ligation of the ureters in dogs led to marked increase in the total nitrogen and urea nitrogen content of the serum, but the residual nitrogen content remained stationary. On the other hand, ligation of the common bile duct sent up the residual nitrogen content at once.

Brazil-Medico, Rio de Janeiro

January 29, XXX, No. 5, pp. 33-40

86 *Syphilitic Pseudo-Banti's Disease. (Syndrome syphilitica de Banti.) O. Clark. Commenced in No. 1.

February 5, No. 6, pp. 41-48

87 Gonococci in Blood of a Syphilitic. (Da presença do gonococco de Neisser em lesões ecthymatosas de um syphilitico.) F. I. da Silva.

February 12, No. 7, pp. 49-56

88 Triangular Flagellate Protozoon of Tetramitidae Family. (Copromastix prowazeki, n. g.—n. sp.) H. de B. Aragão.

89 Transmission of Bovine Tuberculosis by Direct Contact and in Milk. (A tuberculose bovina transmitte-se ao homem e o leite constitue um valioso factor de contagio.) C. Ferreira.

90 Destruction of Adult Mosquitoes with Creolin Fumes. (Destruição dos mosquitos adultos pelos vapores de creolina.) G. Moniz. Commenced in No. 6.

86. **False Banti's Syndrome of Syphilitic Origin.**—Clark reports in detail a case presenting the exact picture of splenic anemia of the first stage of the Banti type, without enlargement of glands and leukocytosis. The leukocytes

numbered 5,400. In twelve other cases in the last two years the liver was the main seat of the syphilitic process, but in this case the primary and isolated syphilitic splenomegaly was accompanied by an apparently normal liver. He compares with it a number of similar cases on record, particularly in American literature. The splenomegaly, the anemia and the comparatively normal appearance of the blood corpuscles, the asthenia, the absence of myeloid reaction, of enlargement of glands, of ascites, of jaundice, the normal outline of the liver, and the absence of leukocytosis are the main features of this syphilitic as well as of true Banti's disease in its first stage. In this case there was nothing to suggest syphilis, acquired or inherited, and the Wassermann test was constantly negative. There was nothing, however, to suggest malaria, tuberculosis, leukemia, typhoid or other infection to explain the symptoms and the febrile course. Clark recalled Ricord's saying "If nothing else explains it, la syphilis est peut-être en derrière," and the prompt recovery under treatment as for syphilis confirmed the correctness of this assumption. Antisyphilitic treatment will not cure sclerosis of the spleen or liver once irrevocably installed, and if the pseudo-Banti's disease has progressed to this stage, splenectomy may be the only resort.

Finska Läkaresällskapets Handlingar, Helsingfors

1915, LVII, No. 10, pp. 1255-1419

91 Paul Ehrlich as a Research Worker. O. Schauman.
92 *Bacteriologic and Clinical Study of Retro-Uterine Abscesses in Pouch of Douglas. B. H. Jägerroos. Concluded in No. 11.
93 Blood Cysts in the Mesentery After Contusion. W. Backman.
94 Varicella in Adults; Twenty-Six Cases. (Om varicellae hos vuxna.) R. Forsius.
95 Influenza Meningitis in Two Infants. E. Nyberg.

No. 11, pp. 1421-1602

96 Defect in Development of Pectoralis Muscle in Five Members of One Family. (En ärftlig defekt i den stora bröstmuskeln.) Y. Kajava.
97 Production of Carbon Dioxid in Boys of From 10 to 18. (Om kolsyreproduktion hos gossar i åldern 10 till 18 år.) H. Olin.
98 Case of Acute Hemorrhagic Necrosis of the Pancreas. (Pancreatitis haemorrhagica acuta.) B. Nyström.
99 Fetal Chondrodystrophy; Two Cases. A. Clopatt.
100 Retro-Uterine Abscesses. B. H. Jägerroos. Commenced in No. 10. See abstract 92.

No. 12, pp. 1603-1732

101 Histogenesis of Dental Enamel. (Studier öfver emaljbildningen.) H. Eklöf.
102 Comparative Tint of Blood Serum in Health and Disease. (Jämförande bestämningar af färgstyrkan i blodserum hos människan vid normala och patologiska tillstånd.) B. Nyström.
103 *Intermittent Exophthalmos. E. Enroth.
104 Infantile Progressive Spinal Atrophy of Muscles in Small Brother and Sister. R. Granholm.
105 Transient Fever in the Newly Born. (Transitorisk feber hos nyfödda.) E. Lövegren.
106 Double Primary Syphilitic Lesion in the Eye. E. Enroth.

92. **Abscesses in the Pouch of Douglas.**—This extensive bacteriologic and clinical study of retro-uterine suppuration is profusely illustrated and fills 160 pages with the details of twenty-three cases and a long bibliography. Jägerroos says that the prognosis is generally good, but that even a strictly local process is liable to rupture and infect the peritoneum. The bacteriologic findings also have a bearing on the prognosis. Evacuation of the abscess at the earliest possible moment is the only safe measure.

103. **Intermittent Exophthalmos.**—Enroth adds another to the fifty cases on record. His patient is a woman of 25, and the cause of the trouble in her case is an obstruction in the jugular vein.

Hospitalstidende, Copenhagen

February 16, LIX, No. 7, pp. 137-152

107 *Chronic Bilateral Febrile Uveitis and Parotitis With or Without Facial Paralysis. (Om Febris uveoparotidea.) K. Lehmann. Commenced in No. 6.

107. **Febrile Iritis-Parotitis.**—The ophthalmologists have had their attention called to an eye affection, an iritis or uveitis, resembling those of syphilitic origin in some respects but absolutely rebellious to specific treatment, and remarkable, further, in that it is accompanied by inflammation of the parotid glands, slight fever and facial paralysis. Lehmann has encountered two cases himself and knows of ten others in Denmark—a total of twelve cases of what he calls febris uveoparotidea. It represents a definite syndrome of bilateral uveitis, bilateral parotitis, low, continuous fever, and, in half the cases, facial paralysis. The uveitis runs a chronic course and may eventuate in blindness in one or both eyes in the severer cases. In a few cases other glands besides the parotid were affected likewise. The prodrome is protracted; the first symptom may be the facial paralysis, which may keep up for three or four weeks before the uveitis or parotitis develops. The latter resembles mumps to a certain extent, but its long persistence, the absence of any known source of infection, the absence of any contagion from these cases, and likewise the fact that orchitis was never known in any instance, seems to exclude epidemic parotitis. The parotitis may develop as an indolent tumor, persisting for two years. In all the cases however, the parotid lesions and the facial paralysis entirely retrogressed in time. A number of points differentiate this affection from Mikulicz' disease of the lacrimal and salivary glands, as Lehmann describes in detail. In nine of the twelve patients there was nothing to suggest tuberculosis or a predisposition thereto, no traces of scrofula, and the skin and subcutaneous tuberculin tests applied to three elicited a negative response. But the other three patients were undoubtedly tuberculous; the microscope revealed tuberculous tissue in the iris of one and in a gland in the neck of another. Uhthoff of Breslau described an analogous case in 1909 which he explained as a case of tuberculous meningitis with tuberculous iridochorioiditis.

Hygiea, Stockholm

LXXVIII, No. 2, pp. 97-160

108 Psychic and Nervous Disturbances in Soldiers on Active Service. (Om psykiska och nervösa rubbningar hos soldater i fält.) O. Kinberg.

Ugeskrift for Læger, Copenhagen

February 10, LXXVIII, No. 6, pp. 163-210

109 *The Duodenal Sound Applied to Young Infants. (Duodenalsondering hos spæde Børn.) P. Hertz.
110 Mortality From Diabetes in Males According to Trades. (Dødeligheden af Sukkersyge inden for de forskellige Erhvervsgrupper i den voksne mandlige Bybefolkning.) K. A. Heiberg.
111 Treatment of Chronic Ascites. (Et usædvanlig længe forløbende Tilfælde af Ascites behandlet med talrige Udtømmelser.) C. Berg-Hansen.
112 Weak Salt Solution Best Dressing for Wounds. (Salt som Saarmiddel.) A. Maag.

109. **The Duodenal Sound Applied to Infants.**—Hertz gives roentgenograms showing the duodenal sound or catheter introduced directly into the duodenum. The catheter was about 40 cm. long and from 14 to 18 mm. in circumference, and was introduced about three hours after the last feeding. It passed smoothly along the inner wall of the stomach and into the duodenum or looped back before entering the duodenum, but the aim was attained in all the thirty young infants, including two with stenosis of the pylorus past its extreme stage. In these two cases he was able with patience and perseverance to insinuate the tip of the catheter in the pylorus—possibly the contact caused the spasm to relax a trifle—then it was easy to slip the catheter into the duodenum and pour in food. Even if the passage of the sound proves impossible at one time, it may succeed at another. Five of the children suffered from uncontrollable vomiting, and by giving them water and food through the duodenal sound the irritable stomach was left to recuperate in peace.

This proved a life-saving measure also in a few cases of gastro-enteritis. In one 4 months' babe with severe gastro-enteritis, vomiting and diarrhea, a marked turn for the better followed the introduction of 150 c.c. of water three times a day; diuresis started up at once. Subcutaneous injection of saline had been ineffectual because the fluid did not seem to be absorbed as usual on account of the doughy condition of the tissues. There had been some blood in the vomit, but this did not deter Hertz from the use of the duodenal sound, but he was always careful to pour the fluid into the sound very slowly. The child's condition was rendered particularly grave by a complicating pyelonephritis.